

Chapter 4.10

Planning

1 INTRODUCTION

This chapter of the preliminary Cost Effectiveness Analysis (pCEA) synthesis report addresses the inter-relationship between the EU Water Framework Directive (WFD) and the spatial planning system in England and Wales.

The integrated approach of the Water Framework Directive (WFD) constitutes an important change in the way that the water environment is protected. The WFD also brings in a new system of planning and managing the water environment at the river basin level that emphasises sustainability.

The successful implementation of the WFD will require a collaborative approach among all those organisations whose duties and interests touch on the water environment, including spatial planners and local authorities, which are the focus of this chapter. The policies and processes currently in place in the planning system have the potential to be compatible with the WFD in most respects, but some modifications will be needed in order to achieve full compliance with the requirements of the Directive. The measures necessary to achieve this and the costs associated with them are discussed in this chapter.

At the same time, the spatial planning system can make an important contribution to the achievement of WFD objectives. By taking water environment considerations into account when considering new development and regeneration projects, the spatial planning process can help to ensure that water resources and flood risks are better managed, water use efficiency is improved and the need for new wastewater infrastructure is minimised, and urban diffuse pollution is addressed in a sustainable and cost effective way. Planning may also contribute to dealing with historic sources of contamination of the water environment through restoration and mitigation measures.

Increases in population and numbers of households, as well as economic growth, will create further pressures on water bodies in particular regions. Integrating WFD considerations in the planning systems will help to ensure that housing and commercial development and regeneration projects do not conflict with the achievement of WFD objectives. These concerns are particularly pertinent in south-east England where extensive housing development is planned, but pressures on water quality and resources are already high.

By itself, the planning system is not likely to be able to close the gap for the particular chemical or physical pressures covered in other chapters of the pCEA Synthesis Report, but may contribute to reducing risks across a whole range of pressures. As such, planning measures are likely to be comparatively cost effective.

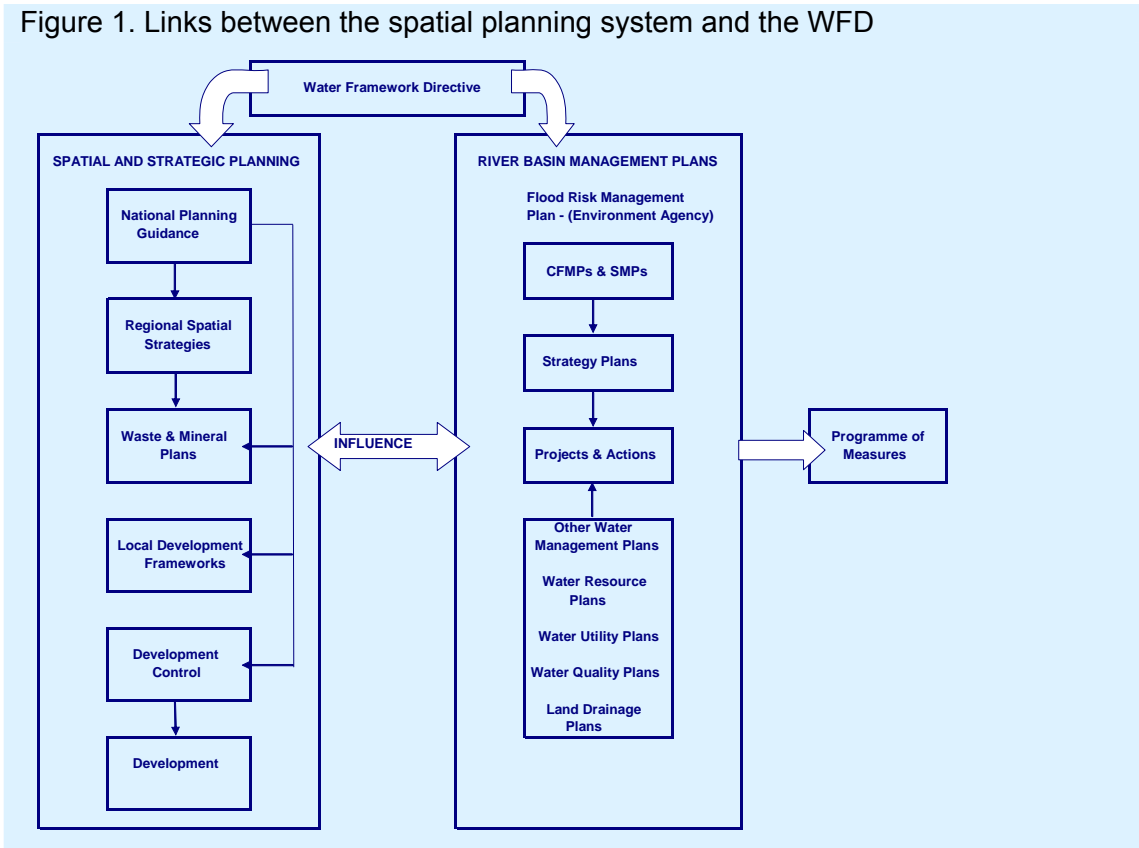
The degree to which spatial planning contributes to meeting WFD objectives depends to a large extent on timing. The WFD sets a target of 2015 to meet good ecological status in water bodies, although it may be possible to extend this deadline by setting alternative objectives. However, planning decisions will take time to feed through into improvements in the ecological status of water bodies. Thus the government may need to consider implementing supplementary measures, in addition to those considered here, to provide

extra incentives to developers and thus accelerate the speed at which WFD-compatible development is rolled out.

Figure 1 illustrates the multiple links between the WFD and the spatial planning system. Changes have been made to the planning system recently. Key elements of this system of relevance to the WFD are: national planning guidance, in the form of Planning Policy Statements (PPS), Regional Spatial Strategies (RSS) and Local Development Frameworks (LDF). Whether the Regional Planning Bodies have a significant role to play in the formulation of planning policy will depend on the development of proposals currently being considered in the sub-national review. They form an essential interface between policies at the national and local level, acting to focus on key issues for the region, set priorities and the core policies that form the basis of the Regional Spatial Strategy (RSS).

Of particular relevance here are the regional housing growth rates set at the district level in the RSS. This will have a direct impact on several WFD objectives and some of the planning activities such as water resource planning. There are also some potential tensions between planning and the WFD, for example hard engineered flood defence could meet the WFD objective on managing the risk of flooding but might compromise the GES objective.

Figure 1. Links between the spatial planning system and the WFD



2 WFD OBJECTIVES

Several WFD objectives are relevant to spatial planning:

- Prevent deterioration in the status of the water environment;
- Aim to improve water status (to achieve Good Ecological Status or Good Ecological Potential);
- Foster sustainable water use;
- Implement an integrated approach to control diffuse and point sources of pollution;
- Ensure public consultation and the active involvement of all interested parties;
- Mitigate the risks of flooding and droughts.

Article 4(7) of the WFD, in particular, is important in the context of spatial planning. Box 1 sets out the provisions of this Article. The Article requires that modifications and new developments that may have a negative impact on the water environment be justified in terms of the public interest and that all practical mitigation measures be taken that are not disproportionately costly. In order to be fully compliant with the WFD, the planning system will need to be modified to include these new requirements. The management of flood and drought risk is relevant to planning because development form, location, timing and land use change can have major effects on flood risk and water use, both positively and negatively.

Article 4(7) of the Water Framework Directive

Article 4(7) sets out various criteria, which must be applied when determining whether or not modifications or new developments that affect water status should be permitted. The criteria include:

- Taking all practical mitigation measures;
- The reasons for the modifications or alterations are detailed and explained in the River Basin Management Plan required under Article 13 and the objectives are reviewed every six years;
- Demonstrating overriding public interest or similar; and
- Confirming that there are no technically viable, environmentally better options that are not disproportionately costly.

In this way, Article 4(7) provides a justification in particular circumstances, where there is likely to be, or has been, a failure to achieve 'Good Status' or prevent deterioration in status due to new modifications or new sustainable human development activities.

In addition to preventing deterioration occurring as a result of development, the planning system can contribute positively to improving water status by encouraging more efficient use and management of water. Particular issues where the planning system is of direct relevant to WFD objectives are:

- Water resource issues and population growth;
- Flood risk management;
- Drainage provision;

- Urban diffuse pollution;
- Minerals and waste planning;
- Legacy issues (contamination etc);
- Regeneration initiatives;
- Tourism and recreation planning; and
- Highways provision and drainage.

Public consultation is already a central part of the spatial planning process, which offers potential for synergies with consultation required under the WFD.

3 EXTENT OF PRESSURE, TRENDS & APPORTIONMENT

In most respects, the planning system in its current form is already compatible with the objectives of the WFD, so the 'gap' between current practice and WFD requirements is relatively small. This is the result of a number of recent changes in the planning system and other initiatives which are discussed in this section. The greatest challenge will be ensuring that no deterioration objectives are met while implementing the government's ambitious plans to expand housing in the south and east of England.

3.1 Sustainability Strategy

The broad policy context is set out in the government's 2005 Sustainable Development Strategy, "Securing the Future,"¹ which sets out a strong commitment to pursuing sustainability across policy areas. These commitments are reiterated in the "Securing the Regions Futures" report.² The commitment to sustainability encompasses water-related issues as well as carbon emissions and so is fully in line with the objectives of the WFD. Indeed, there are efficiencies and synergies to be gained from development which tackles these two sets of issues together, not least because heating water is one of the most energy-intensive activities in households.³ Many regional and local sustainability statements already contain commitments to water efficiency alongside energy efficiency and any measures to foster greater efficiency in building design will provide benefits in terms of both WFD compliance and broad sustainability objectives.

3.2 Reforms to the Planning System

Since the 2004 Planning and Compulsory Purchase Act 2004,⁴ sustainable development considerations have been at the heart of the planning system. This has been reinforced by a several PPS, including PPS 1 which specifically addresses sustainable development. Further PPS have been issued on related issues, including biodiversity, flood risk etc. Most recently, in 2007, a PPS on Climate Change was drafted, which addresses further sustainability considerations and brings in a commitment to good design (e.g. energy and water efficient buildings). This draft PPS also includes a recommendation that planning authorities secure sustainable urban drainage systems

¹ Sustainable Development Strategy "Securing the Future" <http://www.sustainable-development.gov.uk/publications/uk-strategy/index.htm>

² <http://www.sustainable-development.gov.uk/publications/documents/securing-the-regions-futures.pdf>

³ Demand for hot water and heat accounts for 80% of energy demand within the home (Climate Change Programme 2005).

⁴ <http://www.opsi.gov.uk/acts/acts2004/20040005.htm>

(SUDS) in proposed developments, which is in line with WFD objectives. This PPS is awaiting approval and will bring the planning system further in line with the WFD if it is issued in its current form.

In mid-2007, the government consulted on the Planning White Paper, which sets out further proposals to streamline and simplify the spatial planning process. Again, these are to a large extent compatible with the WFD.

The White Paper puts forward the following proposals relevant to WFD objectives:

- For town and country planning, develop a new policy framework to encourage sustainable economic development in the challenging and rapidly changing global context, in line with the Government's objectives for the planning system set out in PPS1;
- Finalise the PPS on climate change;
- Ensure that planning involves communities in a meaningful way, from early on in the planning process;

One of the key recommendations of the Barker review⁵ of housing supply was to streamline policy and process through reducing policy guidance, unifying consent regimes and reforming plan-making. This was recognised in the Planning White Paper noted that the current planning system is "voluminous, complex and unwieldy." There is a potential tension here between the goal of streamlining the planning system and the need to add water considerations in planning decisions as required by the WFD. However, it should be possible to resolve this through revision and consolidation of existing measures rather than the addition of new measures. In particular, the WFD offers an opportunity to consolidate all water-related considerations into a single PPS on water.

The proposals in the White Paper for the infrastructure planning commission relate to large-scale infrastructure projects for which issues of overriding public interest may emerge. However, there are concerns among many parties about this process, its sustainability and even concerns that it will reduce, rather than increase, the level of public consultation and involvement. If these concerns about the level of consultation are justified, then this will give rise to potential tensions with the WFD's requirement to involve communities in the river basin planning process.

3.3 Housing Development

Perhaps the greatest challenge for spatial planners will be meeting the housing-driven objectives of the government's housing development plans, including the Sustainable Communities Plan (SCP) and subsequent policy developments, while complying with WFD and general sustainability objectives. The report of the Sustainable Development Commission (SDC) reviewing the Sustainable Communities strategy raised a number of concerns which are relevant to the protection of the water environment. It now seems likely that housing growth will be even higher, posing even greater challenges.

⁵ http://www.hm-treasury.gov.uk/consultations_and_legislation/barker/consult_barker_index.cfm

The SCP designated four Growth Areas, all in the south and east of England (Thames Gateway, Ashford, London-Stansted-Cambridge-Peterborough and Milton Keynes-South Midlands) and set a target for housing growth of 200,000 additional dwellings per year over the next decade. Subsequent policy developments suggests that growth will be country-wide and a new round of growth points and eco-towns will be identified in all regions.

New housing built from 2007 will represent at least 25% of the overall housing stock by 2050. According to the SDC, the environmental impacts of housing development in the first round of Growth Areas are likely to be very significant, given their location in areas where water resources are already under stress and are also vulnerable to flood risk. The EA has confirmed that water availability is likely to be a constraining factor in the sustainability of this new housing, and this constraint will be sharpened by WFD water quantity standards.⁶ Water quality issues and flood risk will also be relevant. These issues are likely to be relevant in new growth areas outside the south-east, although perhaps to a lesser extent.

In addition to the pressures on water quality caused by increased water demand and wastewater discharge by households, the high level of building activity envisaged by the SCP implies a considerable demand for water and risk of water pollution in the construction process. At the same time, increases in paved areas may exacerbate flood risks and risks of sewer overflows, while land currently providing ecological services as a pollution sink or source of water may be put under pressure, which could make it more difficult to achieve WFD objectives. Flood risk is addressed by PPS 25 (Development and flood risk), published in December 2006, aims to ensure that flood risk is taken into account throughout the planning process to avoid inappropriate development in areas at risk of flooding.

The SDC has recommended that the government require any increased water consumption in new Growth Areas to be matched with reductions in existing homes in the same region – through, for example, wider metering of water use, water efficient appliances, rain-water harvesting and grey water use.⁷ This would help to achieve WFD objectives, but no measures have been introduced so far to achieve this.

However, several existing government initiatives to monitor and promote water-efficient development may help to reduce the impact of new development on WFD objectives.

3.4 Water Savings Group

The government established the Water Saving Group in 2005. This group promotes the efficient use of water in households in England and seeks to identify ways of raising awareness about water efficiency, as well as identifying collaborative work to improve the evidence base and contribute to demand management in the long term. The Group's action plan contains five work streams covering:

- customer perceptions and awareness

⁶ Note 64 in the SDC Report. The Environmental Audit Committee set out some serious concerns about the security of water supply and the state of the water infrastructure in the proposed Growth Areas.

⁷ Sustainable Development Commission Report "Building Houses or Creating Communities" 2007 Sustainable Communities Plan (2003) addresses the decline of urban centres in the North and Midlands of England, and creating new communities in response to demand in the South and East of the England.

- best practice in promoting water efficiency
- information gaps, priorities and funding
- policy and regulatory framework
- measuring success

The actions of the group have not yet achieved any measurable impact on water efficiency in households, but its work is expected to contribute to reducing water demand per household in the future.

3.5 Water Efficiency in Buildings

In 2006 the government launched the Code for Sustainable Homes which sets performance standards for energy, water, materials and waste above existing Building Regulations standards.⁸ The Code sets a required standard for public procurement of new homes and sets out a voluntary standard for new, privately funded homes.⁹ Improved water efficiency standards are required for new publicly-funded homes from April 2007, and more stringent standards will apply to all new homes by 2008. Some initiatives at the local level, such as the Thames Gateway water neutrality initiative, have sought to meet and even go beyond these requirements.¹⁰ However, the SDC notes that water-neutral new developments are the exception rather than the rule. Where pursued, high environmental standards appear to have been driven by the intervention of the particular local authority and higher standards have not been pursued by a large proportion of local authorities which lack the scale and leverage to do so. According to the SDC, there are indications that despite the new Growth Area plans, some District Councils are failing to agree high water efficiency standards with developers.

In order to achieve complete uptake of higher building standards, it may be necessary to introduce stronger requirements in the Building Regulations, to measure the performance of the existing housing stock and potentially extend the regulations to existing buildings, and to set standards for improvements. It is not envisaged that these measures would be implemented through the planning system, but their implementation would make it easier for planners to meet the WFD no deterioration objective.

The Department for Communities and Local Government (DCLG) issued a consultation in 2007 on Mandating Water Efficiency in New Buildings. This contains proposals to adopt demanding whole building performance standards for water consumption in new homes - a maximum consumption of 120-135 litres per head per day. This represents a 10-20% reduction of the current UK average consumption of 150 litres per head per day. However, more stringent targets may be necessary in some water-stressed areas to ensure that WFD objectives of no deterioration are met.

DTI (Department of Trade and Industry), now BERR (Business, Enterprise and Regulatory Reform), opened its Strategy for Sustainable Construction for consultation in mid-2007.¹¹ This recognises that buildings are responsible for half of water consumption, about one third of landfill waste and 13% of all raw materials used in the UK economy.

⁸ <http://www.communities.gov.uk/index.asp?id=1503251>

⁹ The Code does not apply to existing buildings.

¹⁰ The Thames Gateway water neutrality project is considering the feasibility of moving towards water neutrality, whereby total demand for water after development is equal to current demand pre-development, by 2016 and beyond.

¹¹ "Draft Strategy for Sustainable Construction: A Consultation Paper" (July 2007)

The strategy set the following targets for water efficiency which are entirely in line with the objectives of the WFD:

- All new homes built with English Partnerships or Housing Corporation funding to meet Level 3 of the Code for Sustainable Homes (105 litres per person per day) from April 2008.
- Amendments will be made in 2008 to the Building Regulations to introduce a whole building performance standard for new homes, to be set at a target level of 125 litres/capita/day. Defra will review the Water Supply (Water Fittings) Regulations 1999 in 2008 with a view to introducing component based standards for key fittings.
- A reduction in water consumption to an average of 3 cubic metres/capita/year for all new office builds or major office refurbishments on the Government Estate.
- Reduce water consumption by 25% on the office and non-office estate by 2020 relative to 2004/5 levels.
- Public consultation on options for ownership and adoption of Sustainable Drainage Systems will take place towards the end of 2007.

Clearly, the adoption of these proposals would contribute to WFD objectives but the extent to which they would contribute would depend crucially on the speed with which they were rolled out. The assessment of the gap is complicated by uncertainties relating to levels of water savings which will be required to meet WFD objectives, which may result in a more-than-proportionate increase in costs. Additionally, water efficiency measures are reactive, and can only go so far in limiting the impacts of abstraction on water bodies.

However, the planning system does provide an opportunity to reduce the need for efficiency measures by limiting the concentration of new development in areas of existing high demand and limited water supply through national policy and regional strategies. In particular, the anticipated levels of development in the south-east may imply significant investment in water efficiency in new developments, while shifting development to other 'wetter' regions may require lower levels of efficiency investments and associated costs.

The intersection between water quality and planning is not addressed directly in policy. Water quality is mainly addressed through the investment programmes of the water industry and agri-environment initiatives to reduce diffuse rural pollution. Some of the costs of connecting up new developments to the water and sewage infrastructure are covered by the infrastructure charge, a fee paid directly to the water service providers. This fee does not cover the costs of the extension of the network but does not cover the full economic cost of the development on water quality. This cost is shared by all bill-payers in that services area.

Planning is not a 'pressure' and thus the question of apportionment of the pressure does not arise in the same way as for the other pCEA chapters. Measures proposed here will involve planning officers at all levels in the planning system, regional assemblies, local governments and developers and other planning authorities, like the National Parks Authorities and the Greater London Authority as well as DCLG, DEFRA and the Environment Agency.

4 MEASURES

There are two distinct types of measures associated with the WFD in relation to planning:

- Measures to include and address WFD considerations within the statutory planning system;
- Additional costs that will fall on developers to ensure compliance with the WFD-related requirements of the planning system.

This chapter focuses on the former type of measures because the contents of the River Basin Management Plans (RBMP) are not yet known, and thus it is very difficult to forecast what the extra WFD-associated requirements will be for developers. Some discussion of the costs associated with improving water efficiency in developments is included at the end of the section.

At the same time, the amount of pressure that development places on ecological status in water bodies will be specific to each locality, and thus it is extremely difficult to quantify without knowing the location and volume of this development, in addition to the water environment conditions in each area. This is probably the most important area of overlap between planning and the WFD, so it will need to be revisited and costed when more information becomes available.

At the same time, judicious use of the planning system, backed by adequate resources, and with adequate legislation and policy backing it up, to avoid some of the costs associated with traditional infrastructure costs. For example, using SUDS could reduce the amount of rainwater flowing into sewers and so avoid the need to replace pipe networks to accommodate larger volumes. Careful phasing and location of growth can enable existing infrastructure to be used at the most efficiency while reducing or delaying the need for new infrastructure. New eco-towns and growth points offer an opportunity to pilot new approaches to development and the associated need for infrastructure extensions to serve them. Successful pilots can then be showcased and scaled up. However, there is still a concern that this will not be sufficiently rapid to meet the timeframe required by the WFD.

The selection of measures builds on the outputs of the pCEA Flood and Planning group, the 2006 DCLG report on WFD and planning¹² and the outputs of the other pCEA working groups, where relevant. Measures have been selected on the basis of their likely cost effectiveness, while measures which are technically infeasible or disproportionately costly have been ruled out. Reliable cost information on the unit costs for improving water efficiency in new buildings was not available. There is likely to be a huge variation depending on the nature and location of the development. At this stage, it has therefore only been possible to give some preliminary indications of the costs incurred.

There is no strong evidence to suggest that the WFD will increase the unit cost of making a planning application. Any increase in these costs would be in contradiction with

¹² Department of Communities and Local Government (2006) "Implications of the EU Water Framework Directive for plans, plan making and development control" Report prepared by Royal Haskoning and Jan Brooke Environmental Consultant.

the provisions of the Planning White Paper to streamline and improve efficiency in the planning system.

Possible measures to ensure that WFD requirements are met include:

- Introduce a Water Policy Planning Statement. This would cover: water issues of relevance to planners; links between water and the broader sustainability agenda.
- Embed WFD requirements in the new National Policy Statements
- Amendments to existing guidance or new informal guidance to include WFD requirements
- Raise awareness in the planning profession relating to the requirements of the WFD and how this relates to land use planning
- Provide immediate guidance to planning authorities that are currently preparing development plans to identify potential WFD issues and to prepare responses to these
- Enhance the technical skills of planning practitioners
- Provide technical support for planning practitioners
- Accommodate WFD objectives in land use plans and the development control process
- Provide planning liaison and consent for any mitigation measures required to meet WFD objectives (increased load of applications to be processed)
- Deeper environmental appraisal for new works (increase in cost and time taken to plan new works)
- Provide guidance on the consideration of WFD objectives within the SEA process
- Integrate WFD objectives into the review of PPS12 (Local Development Frameworks).

More details on these measures, where available, are provided below in section 4.5.

4.1 Measures Not Considered

It is not likely to be necessary to create new structures or procedures in the planning system in order to meet WFD requirements. Changes that have already been introduced in the planning system – Regional Spatial Strategies (RSS) and Local Development Frameworks (LDF) – have the potential to deliver the required coordination between the EA and planning authorities, and further changes are already planned for Regional Assemblies and Local Development Authorities to merge. The RSS are compatible with moving towards WFD objectives and can integrate the spatial planning implications of the content of River Basin Management Plans and their associated programmes of measures. By using the outputs of the RBMPs, regions can ensure that the sustainability implications of options for water planning and management are fully taken into account in the RSS.

LDFs are also required to take “full account of the land use consequences of other policies and programmes” including “environmental protection, and consider how it can assist in the delivery of these.” Again, the RBMPs should help planners to ensure that this is this case in relation to the water environment and ensure that sustainability objectives are being met. There are opportunities for synergy between:

- WFD programmes of measures and local Action Plans
- WFD requirements to enhance public participation and the Planning White Paper.

Current planning mechanisms have been introduced relatively recently and need time to mature. There is no reason a priori to expect that these mechanisms will not be able to meet WFD requirements, but they need time to mature. RSS have recently been completed in some regions; others are due to be finalised early in 2008. They are expected to be fully reviewed every 5-10 years and selectively reviewed on an ongoing basis.

It is also not considered necessary to put in place new measures to collect data. Systems are already in place to plan, monitor and review. Clear objectives relating to WFD objectives are needed, but not further efforts should be necessary. The sustainability appraisal process provides a mechanism to feed WFD objectives into RSS and to monitor them.

4.2 Costing Approach

The costing element has been developed and presented in a manner which enables an overall total cost (to equip the planning system in response to the WFD) to be estimated. At the present time however, the cost of certain elements remains to be established within Government (the cost of PPS production etc). This figure would therefore represent the 'ball park' cost to the Government, to ensure that the planning system can respond to, and deliver WFD objectives in providing development.

It is not currently possible to measure these costs given the uncertainties about which specific measures which will need to be pursued to implement the WFD (the content of RBMPs for example). There are several ongoing initiatives related to sustainable housing and development which will also contribute to meeting WFD objectives. The UK Sustainability Strategy¹³ contains a host of initiatives which are likely to be complimentary to the pursuit of WFD objectives, as do a range of related projects such as the emerging initiatives relating to water resource issues (for example, the "Mandating Water Efficiency in New Buildings" initiative¹⁴ which was consulted on in early 2007. It is not possible to disentangle WFD-specific costs from costs imposed by these other policy drivers.

Instead, this chapter includes some discussion of the likely scale of the cost and the manner in which this may manifest itself in regard to development location, water quality and water resource issues.

The cost of many measures included in this chapter have been estimated on the basis of expert judgment but are subject to a high degree of uncertainty. There is also uncertainty of the over the effectiveness of measures.

Figure 2, below, shows a range of illustrative actions which the planning system is likely to take in response to WFD objectives. In addition, the planning system can play a wider

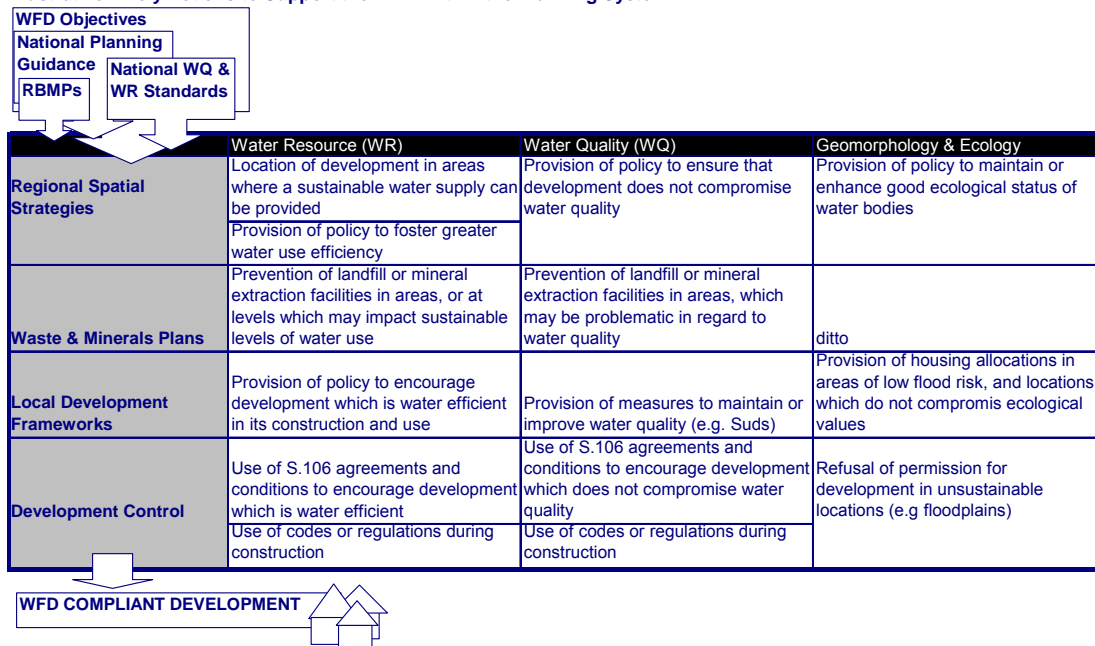
¹³ <http://www.sustainable-development.gov.uk/publications/uk-strategy/index.htm>

¹⁴ The consultation is available for download at:

<http://www.communities.gov.uk/publications/planningandbuilding/mandatingwaterefficiency>

role from regional strategies downwards in considering the levels, location and timing of spatial development in relation to water infrastructure capacity. For example, the closer relationship between site allocations and infrastructure providers can mean that the pressure of development on existing water infrastructure is reduced, and so less likely to lead to deterioration in water quality and can be phased to coincide with infrastructure upgrades. The closer relationship also gives utility providers more information which reduces risks in their own planning processes.

Figure 2
Illustrative Likely Actions to Support the WFD Within the Planning System



4.3 Uncertainty

The main area of uncertainty in relation to spatial planning is which measures will be included in RBMPs. When this is known, it will be possible to give a more accurate estimate of both costs and effectiveness of spatial planning measures.

4.4 Measures ruled out on grounds of technical feasibility

Where measures have been identified as restricted in their application to the extent that they are not feasible, they have been ruled out of this study. Only one example was found within the context of development provision, namely the use of 'green walls'. Whilst green roofs to address issues with carbon dioxide emissions and run-off are well defined and established. The use of green walls remains an concept with no wide-scale practical application. As such it was not considered further in this study.

- EA/Planning Authorities Transfer of data on all proposed developments at the initial options testing phase of planning, including type, scale and timescale of project.
- EA: Collect and integrate data from multiple sources e.g. non-statutory Shoreline Management Plans and Conservation Strategies

- Collaboration and iteration between planning authorities and EA on those proposals that might have significant effects on the water environment. This will build on existing relationships between planning authorities and the EA.
- Include water as a critical factor in spatial development decision-making
- Introduce over-arching guidance in the form of a PPS on water. This should bring together all the PPS on water including PPS 25 on flooding as well as bringing in consideration related to WFD objectives. This proposal is supported by planners. (Evidence?) The coordinated approach should mean that no extra costs are incurred for implementing the PPS beyond the administrative cost of drafting it. The PPS would take approximately 12 months to introduce and would imply a one-off costs. This would allow for existing processes to be streamlined, in keeping with the proposals set out in the Planning White Paper.
- Information dissemination and workshops needed to roll out the implementation of the PPS quickly and effectively. This is in line with the approach taken for recent existing PPS.
- Provide a strategic view to planners so that they know the direction that we are heading in and how quickly any changes are expected to take place, for example in relation to market transformation.
- Carry out EIA at the appropriate environmental boundary (river basins and sub-basins) [what happens now?]
- Coordination between local authorities where administrative boundaries cross river basin boundaries. There may be costs savings as a result of coordination between different local or planning authorities (for example, in relation to water resources, where companies can consider inter-basin transfers as well as other water resource supply and demand options.
- Possible need to consider extra incentives for developers and others to roll out actions more quickly, if the pace of implementation is too slow e.g. tax incentives
- Ensure that water resource infrastructure (reservoirs, new plans, transfer schemes) are included in RSS rather than added retrospectively.
- Ensure that the SA/SEA appraisal criteria and RBMP risk assessments are complementary. Currently, the appraisal criteria for RBMPs exceed the criteria for SA/SEA.

4.5 Description of Measures

4.5.1 Measure Description 1 – Raising Awareness

Measure 1 contains two measures which address specific elements of the task of raising awareness of the implications of addressing WFD objectives in the land use planning system. The two measures are complimentary and it is strongly recommended that both measures are adopted. Measure 1.1 relates to the provision of a single point of contact in each EA regional office for liaison with planning officers and government offices. It is envisaged that this measure will most effectively provide support to planners in meeting WFD objectives. The measure has been simply costed to provide an estimated cost of £400k annually to house a specific point of contact in each region.

Measure 2.2 relates to the provision of training workshops for planning professionals which are aimed at training, educating and raising awareness within the planning profession. It is considered that this measure is complementary to Measure 1.1, and

would be likely to ensure that the EA are not inundated by requests for support from planners. In this way measure 1.1 and 1.2 are seen as being harmonious. Measure 1.2 contains three options a high, medium and low cost relating to the provision of local, regional or a singular national workshop. The cost for a specific workshop for each local government office appears exceptionally high (10 times that of the other two options) and it is considered that the medium and low options are most appropriate. The knowledge gained by officers in attendance could be disseminated within each government office, without the need for a specific workshop. A singular national event, does not offer the level of interaction provided by regional or local events, will require more travel time and may not be readily absorbed into the calendar of planning officers. Given the similar costs of the Medium and Low options, the medium option of a series of regional workshops costing approximately £248K total, would appear the most prudent option.

4.5.2 Measure Description 2 – Centres of WFD Excellence

Measure 2.1 relates to the provision of a centre or series of centres of excellence for WFD. At present the costs of establishing such a centre are unknown, and further work is required to establish this cost based on a consideration of similar centres for the National Procurement Strategy etc. The intent of such centres would be to provide a regional focus for the exchange of knowledge and support for planners (and others) who are actively implementing WFD objectives through other themes. The centres have the advantage of ensuring national consistency and best practice. It is recommended that the provision of a national, regional or local centre or series of centres should be established. The most cost effective option would depend on the costs established. However, it is likely that a series of regional centres would be the most appropriate option. Measure 2.1 is seen as being complementary to other measures included within this report.

4.5.3 Measure Description 3 – Guidance and Representation in WFD Stakeholder Groups

This suite of measures contains three specific measures aimed at providing guidance on what is expected of the planning system in regards to WFD and in ensuring that planners are included in the process of producing and implementing RBMPs.

Measure 3.1 relates to the cost of a Ministerial Statement which would fully express the Governments expectations of the land use planning system in meeting the objectives of the WFD. This measure benefits from an efficiency in enabling government to provide a clear, prompt and succinct expression of how the planning system is expected to respond to the WFD. It is not however, the ideal mechanism for technical advice, nor is it likely to be as readily absorbed by the planning system as formal government advice (a PPS or a TAN). The cost of producing a Ministerial Statement was not available at the time of writing. However, it is likely that such statements are efficient mechanisms for communicating messages of intent in a timely manner. Government will need to determine if it wishes to provide a statement in the coming months which provides a clear message of the measures which will be required within the land use planning system, or if the other measures outlined above in addition to the provision of formal planning policy and technical guidance notes are a more appropriate Government approach.

Measures 3.2 and 3.3 relate to ensuring that planning professionals are including on WFD stakeholder groups (Measure 3.2) and River Basin District Liaison Panels (Measure 3.3). Table 3.1 provides a costing element for each which is relatively minor (approximately £48k for the provision of both measures nationally on an annual basis). It is considered that both measures are complimentary and essential if the land use planning system is to be truly engaged in WFD delivery. Measures 3.2 and 3.3 are already being provided to some degree, however, given the national application of WFD, it would be beneficial for this to be formalised and resourced to ensure national consistency.

4.5.4 Measure Description 4 – New Policy & Guidance (England)

This suite of measures contains five measures, which could be singularly or collectively adopted to provide WFD guidance for land use planning in England.

Measure 4.1 relates to the provision of a specific PPS on Water or for the WFD. The merits of such a PPS are well described in the DCLG report. At the present time however, the cost of producing a PPS has not been established. It is likely however that the cost of producing a water specific PPS would be similar to that of PPS 9 which addresses biodiversity, and is equally cross-cutting and of similar scope. The critical factor in whether a PPS would be appropriate depends on the actual cost of production, relative to other measures (below) and the timing of producing a PPS, relative to the timing of RBMP production. PSSs require extensive consultation, and it is likely that at this stage, PPS based guidance would not be available for some time. In the interim period, the planning system will need to respond to emerging WFD and, specifically, RBMP requirements. In the long-term a PPS may be desirable, however, short term guidance is currently required.

Measure 4.2 relates to the provision of a targeted practice guide which would articulate what the planning system should be doing to address WFD and how this should be achieved. Such a document, could be produced relatively quickly and could focus specifically on the requirements of the planning system. Such a guide could be based on similar documents produced by Government such as the guidance relating to Sustainability Appraisal for RSS and LDFs. The in-house costs of Government production are not known, however a typical consultancy would be likely to provide such a document, with supporting consultation for £90k. Government supporting costs would be approximately £10k giving a total of £100k for this work. In addition to this, planning authorities would need time to absorb and use such guidance. At the present time this has not been established, but the figure per authority would be likely to be similar to the time spent absorbing similar guidance documents. A document of this type, could provide guidance in the short term, in advance of RBMP requirements emerging. The guidance could then be replaced or accompanied by a PPS if this was considered appropriate at that time.

Measure 4.3 simply states the need to ensure that it is clearly expressed and ensured that the provisions of Article 4(7) of the Directive are addressed in providing development which affects a water body. This measure simply needs to be expressed in guidance of whatever form (Measure 4.1 or 4.2 etc), and so it's cost is negligible and absorbed in other measures. The cost to developers and consumers is likely to be

considerable however, and the likely issues relating to this are addressed in the narrative in the conclusion of this report.

Measure 4.4 entails the review and re-drafting of all existing guidance (PPSs, planning legislation etc) to ensure that WFD objectives are addressed by the planning system. The cost of undertaking this exercise is extremely difficult to estimate, since the modifications to legislation may require extensive consultation and legal review etc. A cost estimate has been provided on the basis of an initial review and assessment undertaken independently. This figure of £80k would only provide a template for measures required, and the subsequent costs of addressing actions identified and consulting on any changes is likely to be considerable. The time taken to provide this review may also be extensive, and in a similar manner to PPS production is unlikely to provide any output in time for the planning system to respond to RBMP requirements. The matter of whether a new single guidance source (PPS) or a review of existing guidance to meet WFD objectives is outside the scope of this study, and the financial implications are not known at this stage.

Measure 4.5 is a simple extension of Measure 4.2. This measure would however focus specifically on how WFD objectives should be accommodated and addressed within LDFs. Such a guidance document would be relatively quick to provide and based on the provision by an external consultant would cost approximately £50k. This cost would however, only represent a small part of the true cost of adoption within local government offices.

Given the suite of measures above, it would appear that the issue of providing guidance in a timely manner with RBMP production requires measures which can be provided quickly. Measures 4.2, 4.3 and 4.5 appear to provide this, with an estimated delivery cost of £150k coupled with the costs of application within local authorities. The provision of guidance of this kind (supported by measures outlined above to raise awareness) may be sufficient to equip the planning profession with the measures required to address the WFD. Whether this informal guidance will suffice in the long-term would need to be monitored however, to establish if extensive legislative change is required and/or a new PPS desirable.

4.5.5 Measure Description 5 – New Policy & Guidance (Wales)

Measures have been provided for Wales akin to those above for England. In order to avoid repetition, it is suffice to say, that whilst the mechanisms may be different, the issue remains the same as in England. Whether quick informal guidance will prove sufficient, given the timing constraints of more formal approaches. The same matters for consideration apply in Wales as in England.

4.5.6 Measure Description 6 – Consistent Cross Boundary Policy Provision

This measure simply relates to the need to ensure that the planning system can provide consistent cross boundary WFD initiatives across England and Wales. In the cost of RSS production it is anticipated that once this requirement has been addressed in guidance (see above) the cost would be minimal (approximately £5k per RSS).

4.5.7 Measure Description 7 – RSS and LDFs to Include WFD Guidance and Objectives

This measure simply relates to cost of including WFD requirements into primary land use plans. This is an essential and obvious requirement and one that will ultimately be fed by guidance and RBMP output. At the present time, the costs (per RSS or LDF) of absorbing WFD objectives is not known, and the uncertainties relating to what measures will be required preclude meaningful estimation of costs. Table 3.1 provides an account of the additional cost to factor WFD into the Sustainability Appraisal of LDFs which is estimated at £2.5m nationally, and will seek to shape policy development in an efficient manner. However, the costs to include WFD specific policy and to respond to RBMP requirements in LDF policy, is likely to take considerable time within the plan making process. Based on an assessment of the average cost of LDF production being £1m, if meeting WFD requirements required an additional cost of 5% per plan, this would require an additional £25m nationally for LDF provision. Such figures are however, completely arbitrary and at the present time, the cost of accommodating the WFD into the plan making process is simply not known.

4.5.8 Measure Description 8.1 A WFD Risk Assessment as a Part of the Plan Making Process

The DCLG report suggested that it may be prudent to provide a WFD Risk Assessment when producing a land use plan, in a similar manner that a Flood Risk Assessment is produced for development or an Appropriate Assessment is applied to a land use plan. The intent being to provide a structured approach to addressing the impacts of planning policy on WFD objectives. This approach, may provide an efficient mechanism for testing RSS or LDF policy as plans are produced. This measure could replace (or be included within) the consideration of WFD within the Sustainability Appraisal process. It is likely that the costs of a discreet, stand alone assessment will be higher than the cost of including this within a Sustainability Appraisal. Table 3.1 suggests the cost to be three times higher per plan than for a Sustainability Appraisal WFD component. The benefits of a more concerted specific assessment may bring efficiencies in policy development, which the Sustainability Appraisal process cannot achieve. Further study would be required on this matter, but the use of a specific WFD assessment may provide a powerful tool to efficiently ensuring that RSS and LDF policy is WFD compliant.

4.5.9 Monitoring of Water Related Indicators

Measure 9.1 addresses the need for water related indicators to be factored into the Annual Monitoring Report produced to support LDFs. The provision of indicators relating to water are already covered by existing guidance and any additional cost for WFD is expected to be negligible.

4.5.10 Encourage Development Which Includes Good Water Management Practice

This measure relates to the process by which development is provided utilising sound approaches to water management. This measure will largely manifest itself in the advice given to developers by planning officers at the pre-application stage, where good practice can be encouraged at the outset. Providing that planning officers are equipped with expertise in this area (see training measure descriptions 1 and 2 above), the cost here relates to the time spent in pre-application meetings. The matter is complicated by the lack of information relating to the number of development schemes to which this

would apply and also the differing approaches taken by local authorities in charging for such meetings. Some authorities charge (on average at £100) per meeting whilst some (the majority) do not. The matter of who would bear the cost for this service is therefore difficult to establish. Table 3.1 provides a scenario based on an estimation of three additional meetings being required weekly per authority, this would approximate to £7.8million nationally per year, which would either come from the authorities or from developers (if a rate of £100 per meeting was applied). The cost of providing such measures (in development schemes), cannot be estimated at this time, but is discussed in the narrative in the conclusion of this report and Measure 10.2 below.

4.5.11 Use of Planning Conditions and Section 106 Agreements

The provision of development which is designed in a manner which will accord with WFD objectives, has major financial implications for the development industry. The matter of providing these measures is discussed in the narrative in the conclusion of this report. The matter here relates to the additional costs of providing conditions and agreements to ensure that such measures are adopted in development. At this time, given the uncertainties regarding the measures which will be required, it is not possible to establish the additional cost in terms of planning officer time, which may be required. This will relate to the degree to which development needs to 'adjust' in regard to the WFD. The feedback of local government should be periodically sought however to establish the level of additional time that planning officers are spending in regard to WFD based issues within Development Control. This will only become apparent once the measures of RBMPs are implemented through the planning system.

4.5.12 Revision of the Building Regulations to Ensure that Homes are More Water Efficient

This measure relates to Building Regulations rather than the land use planning system, so should not strictly be considered part of the suite of measures relevant to this report. This 'option' has been included however to highlight the fact that there are efficiencies to be gained, and synergies to be made, from coordinating planning and building control in regard to WFD. The cost of revising (and implementing) the Building Regulations to provide development which will move towards more sustainable/WFD compliant approaches to building design is not known at this stage. This measure should however, remain under consideration by Government. The use of the Building Regulations could reduce the costs to the planning system, if the standards for construction address water efficiency explicitly to the level required for WFD objectives.

4.5.13 Measure Description 10.4 – Provision of WFD Risk Assessments for Development

Measure 8.1 outlined the potential benefits of providing a WFD Risk Assessment as a key element of the plan making process. Measure 10.4 applies this measure to the Development Control process. This measure simply relates to the requirement (provided in legislation or regulation) to undertake a WFD Risk Assessment for certain developments. The benefit of this measure is that it provides a formal, explicit mechanism for the Development Control process to address WFD (in a similar manner to Flood Risk Assessments). A range of likely costs is included based on the provision of existing Flood Risk Assessments and may vary between £1.5k and £40k depending on the scale and nature of the development. No further costs can be established at this stage, but this measure requires further consideration in establishing the manner in

which the land use planning system will control development in regard to WFD. Although the costs of this element are only transferred (onto the developer), this measure has the potential to enable local authorities to have a clear and efficient mechanism to inform their decision making in regard to WFD.

4.5.14 Compliance with WFD for New Developments

The measures described in 11.1 to 13.1 relate to steps which can be taken at the development stage (Phase 2) to enable development to proceed, whilst according with the requirements of the WFD. The cost of these measures is not known at this stage, and measures to estimate this would mean little in the absence of further study on specific technical elements and the specifics of what steps are actually required. These measures are however, likely to result in the most significant costs by an order of magnitude, which is likely to be many times greater than all the measures listed above combined. This is the cost of developing in a manner which will be required under WFD. This cost is also cross-cutting in that it relates to many other themes. The critical elements relate to water resources, water quality, geomorphology and ecology and these matters are discussed at length, in the conclusion of this report.

4.5.15 Increasing water efficiency in buildings

A small number of projects like the Z-Squared project, a sustainable housing development in the Thames Gateway area (<http://www.wwf.org.uk/filelibrary/pdf/z-squared2004.pdf>), suggest that improving water efficiency in housing developments implies a relatively small increase in construction costs. The Z-squared housing project for example, provided sustainable housing (in terms of energy and water use) at an additional unit cost of 8%. The EA report which sought to assess the cost of compliance with the Code for Sustainable Homes (see above) (EA, 2006) provided a range of costs associated with levels of water efficiency in domestic properties. The cost range provided relates to the cost of domestic water saving measures based on a base level of measures currently taken. The increase in cost (which was solely related to water infrastructure within the dwelling, not total dwelling cost) demonstrated a gradual increase of between 25% and 36% as levels of water use per head were reduced from the baseline (150litres per head per day (lhd)) to 130lhd and 100lhd. Introducing a rainwater system increased costs by a factor of seven. The use of policies within LDFs and RSSs to promote water efficient design, supported by the use of Section 106 agreements within the development control system, provides the opportunity to ensure that new development will be provided with levels of water efficiency commensurate with the water resource requirements specified in the RBMPs.

If the reduction in demand per household required under the WFD is large, measures for developers and households associated this could be significantly more expensive. At present, the levels of efficiency required are not known so the costs are difficult to estimate.

4.6 Scenarios

For this chapter, a single scenario was considered which would bring the planning system into line with WFD objectives.

5 FURTHER ISSUES

The planning system is well suited to achieve WFD objectives but it is not clear how soon the benefits of the approach will be realised. The geographical scale will be relevant – some cross river basin measures will need to be considered; in some cases self-sufficiency at a neighbourhood level and the implementation of water neutral development will be appropriate. Ultimately, it may be necessary for the government to play a more active role by providing incentives, information, examples of good practice etc to ensure that water neutral development is rolled out with sufficient speed in these areas.

A further complication is the different time horizons of regional plans and water resources plans. For example, the South East England Plan provides population estimates to 2025, but the 2009 water resource plans produced by the water companies look forward to 2035.

The differences in boundaries between administrative regions and River Basin districts may also pose a challenge. However, this can be overcome with improved coordination between local authorities across river basin boundaries, which is fully compatible with the recommendations in the Planning White Paper.

Summary Costs of Potential Measures

Measure	Detail	Cost
The need for engagement of planners in the WFD implementation process	Awareness raising and training	£400k annually
	Awareness raising workshops; training courses	£248k
Guidance and representation in WFD stakeholder groups	Guidance via Ministerial Statements	£2million
	Representation of planners on WFD stakeholder groups	£18,000 annually
	Representation on the River Basin District Liaison Panels	£27,000 annually
Guidance	Water PPS	NA
	Provide a new targeted practice guide, including a 'roadmap' document which 'sign-posts' to existing WFD-relevant policy	£100,000
	Plan review and re-drafting of relevant components of existing guidance	£80,000
	Guidance on how to incorporate WFD requirements into Local Development Frameworks (LDFs),	£50,000
	Local Development	£2.5-25mn

	Frameworks and Local Development Plans to incorporate WFD guidance	
	WFD assessment as part of plan-making	£7.5mn
Encourage development which demonstrates good water management practice	Negotiation at pre-and post-application stage	£8m
	Development of a water risk assessment similar to flood risk assessment	£20,000

NB For the purposes of this report, it was not possible to estimate costs for other measures considered in the chapter, notably a Water PPS. Furthermore, it has not been possible to estimate the costs to developers of new requirements introduced as a result of the WFD, or potential savings from better coordination between developers and infrastructure providers. Further research in these areas is necessary to provide a full picture of costs.

Table 3.1. Review of Measures and Delivery Mechanisms

						Cost of delivery	Non-financial costs and wider impacts, and advantages of the measure	References/Sources of Information	Uncertainties
F	Need for mechanisms to facilitate WFD compliant development	10	Encourage development which demonstrates good water management practice, i.e. 'WFD friendly'	10.1	Negotiation at the pre-application and application stages	<p>The cost of meeting with developers at this stage will either result in an additional cost to local authorities or to developers. At present, some authorities charge for such meetings (on average at £100 per hour), whilst the majority do not.</p> <p>In order to establish an approximate figure for this cost, it would be necessary to establish the total number of planning applications which EA are requested to comment on (as an approximation of the total number of application, to which this is likely to relate) and an account of the number of authorities which charge and which do not. This information is not known at the present time, however, the cost implications of this measure may be significant if land allocation for development becomes more problematic as a result of WFD.</p> <p>If for example three additional meetings were required weekly per authority, this would approximate to £7.8million, which would either come from the authorities or from developers (if a rate of £100 per meeting was applied).</p>	Additional works and costs to developers may discourage development	DCLG, WAG, RTPI, POS, POS for Wales. Planning Advisory Service, Planning specialists, CIRIA guidance, SEPA guidance	<ul style="list-style-type: none"> - Uncertainty over the gap that must be closed in order to meet the specified WFD objectives; - Uncertainty over the source (apportionment) of the pressure; - Uncertainty over the effectiveness of measures; - Uncertainty over the costs of measures.
				10.2	Use of planning conditions and Section 106 agreements	WFD may lead to an increased use in planning conditions and Section 106	Appeals and public inquiry	Planning specialists.	

					Cost of delivery	Non-financial costs and wider impacts, and advantages of the measure	References/Sources of Information	Uncertainties
					agreements to protect water bodies from development. Officer time, and the time required by consultants is difficult to establish at this stage, in the absence of knowledge relating to measures required.			
				10.3	Introducing requirements to ensure water efficiency (e.g. in the Building Regulations), i.e. 'WFD standards for homes'	Revision of the Building Regulations. The cost of revising the Building Regulations has not been costed in the exercise. The cost would clearly relate to the additional measures required and their scope. It may also be possible to absorb such changes in the course of any ongoing changes to the Regulations. The cost to developers in conforming to such changes may be enormous and this matter is discussed in the conclusion of this report, in regard to water quality and quantity issues.		
				10.4	Development of a WFD equivalent to the 'flood risk assessment' (i.e. a 'WFD risk assessment') which developers would need to prepare and submit with their application. Alternatively, it may be possible to combine the process of WFD and Flood Risk Assessments.	An estimation of the cost of a FRA for planning applications has been based on the provision of FRA's for a range of schemes. Depending on the proposal at hand a range of costs (per application) would include High cost – FRA is £40k Low cost – FRA is £1,5k The total cost would relate to the total number of applications nationally which would require such an assessment and the nature and level of FRA required.	Statutory determination periods.	

					Cost of delivery	Non-financial costs and wider impacts, and advantages of the measure	References/Sources of Information	Uncertainties
					This is not known at this stage.			
		11	Promote SUDS and other green development	11.1	Green roofs and green walls Green paving Drains Swales Wetlands	Costs of including in new development; and additional cost of retrofitting existing developments. This potentially an enormous cost. The actual likely costs cannot be established at this stage (due to the uncertainties relating to the measures required etc). This matter is addressed in the conclusion of this document.	Improved water quality can be of benefit to economic development and regeneration. Need to decide on ownership and responsibility for the maintenance (responsibilities rest with durable, accountable organisations that can be expected to have the financial capacity to meet their responsibilities in the longer term).	There is currently limited policy or standards in the UK to guide planners or developers, and no fiscal incentives for building green roofs.
				11.2	Proposals for new developments (including car parking) should include a supporting hydrological study and surface water management plan (i.e. in relation to peak flows and time to peak).	The likely cost of such options would be likely to be reliant on the use of SUDS. At the present time, likely SUDS costs are being determined in ongoing research by Defra and the EA. The output of this work, will be central to estimating likely national cost implications for the use of such approaches. Clearly the cost will be in the order of magnitude of many millions.		
				11.3	Partial replacement of hard standing areas with SUDS (for example, where resurfacing works are required, filter drains and permeable surfacing should be included).	As above.		
		12	Key actions for developers (to be incorporated in the LDF or Local Development Plan)	12.1	Avoid or limit development and redevelopment within flood prone areas and adjacent to watercourses	Land costs may increase outside of the floodplain, thus making the development more expensive. A specific study may be		

						Cost of delivery	Non-financial costs and wider impacts, and advantages of the measure	References/Sources of Information	Uncertainties
						required to determine the increase in value of WFD friendly land. However at the present time, the issues relating to this are discussed in the conclusion of this document.			
				12.2	Maintain a riparian buffer zone between development / redevelopment and any watercourse (top of bank)	See note on land costs above.			
G	Increases in population and household numbers, which will place additional demands on water resources.	13	Adopt water conservation measures in policies relevant to water resources (primarily housing and employment related policies).	13.1	Water efficiency measures are contained within a range of existing and emerging household sustainability standards schemes, which includes the Ecohomes Scheme (Buildings Research Establishment, 2006) and proposals for introducing a code for sustainable homes (ODPM, 2005).	Policy addressed above. A specific study may be required to determine the increase in value of WFD friendly land. However at the present time, the issues relating to this are discussed in the conclusion of this document.			

