Number: **WG21431**

Llywodraeth Cymru
Welsh Government

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Consultation Document

A Water Strategy for Wales

Date of issue: **7 April 2014**
Responses by **4 July 2014**

Overview

This twelve week consultation seeks views on the Welsh Government's Water Strategy for Wales which sets out our policy direction in relation to water.

How to respond

Please respond to the consultation by completing the questionnaire provided with this document.

Alternatively, you can e-mail or send any comments to the address further below.

Further information and related documents

Large print, Braille and alternative language versions of this document are available on request.

An on-line version of the consultation document and response from can be found at: www.wales.gov.uk/consultations/environmentandcountryside/?lang=en

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Data protection

How the views and information you give us will be used

Any response you send us will be seen in full by Welsh Government staff dealing with the issues which this consultation is about. It may also be seen by other Welsh Government staff to help them plan future consultations.

The Welsh Government intends to publish a summary of the responses to this document. We may also publish responses in full. Normally, the name and address (or part of the address) of the person or organisation who sent the response are published with the response. This helps to show that the consultation was carried out properly. If you do not want your name or address published, please tell us this in writing when you send your response. We will then blank them out.

Names or addresses we blank out might still get published later, though we do not think this would happen very often. The Freedom of Information Act 2000 and the Environmental Information Regulations 2004 allow the public to ask to see information held by many public bodies, including the Welsh Government. This includes information which has not been published. However, the law also allows us to withhold information in some circumstances. If anyone asks to see information we have withheld, we will have to decide whether to release it or not. If someone has asked for their name and address not to be published, that is an important fact we would take into account. However, there might sometimes be important reasons why we would have to reveal someone's name and address, even though they have asked for them not to be published. We would get in touch with the person and ask their views before we finally decided to reveal the information.

Ministerial Foreword

Water is one of our greatest natural assets and is an integral part of Wales' culture, heritage and national identity. It shapes our natural environment and landscapes, providing us with a sense of place in mountains, valleys and coastline and supporting Wales' diverse wildlife. It provides a basis for economic development, including energy supply and tourism. Access to clean, safe, and resilient water supplies also plays a vital part in supporting the health and well-being of everyone who lives, works and visits here.

I want to ensure that Wales has a thriving water environment which is sustainably managed to support healthy communities, flourishing businesses and biodiversity. I want our people to receive first class, value for money, water services with water used efficiently and respectfully by all.

In this consultation on our Water Strategy, we set out how we believe our water resources should be managed to support communities and business, helping us drive green growth, ensure resource efficiency, and enhance the resilience and diversity of our natural resources and enabling us to tackle poverty. We propose a more integrated approach to the management of water, in line with our overarching natural resource management approach. This is the only way that we will be able to address the challenges facing our water resources and maximize benefits for Wales

We also need to ensure that we have the appropriate tools and powers at our disposal to deliver the Strategy's objectives. I therefore welcome the Silk Commission's recommendations for reforming the constitutional position in relation to water so that decisions on water in Wales are a matter for the National Assembly and the Welsh Government. This will, as the Silk Commission confirms, ensure that the interests of the people of Wales are better served in future.

We face significant challenges in terms of how we manage our natural resources. We need to act now to ensure we use these resources in a sustainable manner whilst at the same time ensuring a just return on our natural capital. We cannot deliver our objectives by legislation and guidance alone – we need to work together with everyone who has an interest in water, sharing expertise and developing common outcomes we can all work towards. The consultation on this Strategy is an important part of that process and will help to inform the future direction of water policy in Wales.

Alun Davies
Minister for Natural Resources and Food

Contents

1. Introduction

This Strategy sets out our long-term policy direction in relation to water. We aim to balance the long-term needs of a sustainable and resilient environment with the need to ensure that there are sufficient, reliable water resources and waste water services available to encourage sustainable growth and job creation.

Key to our approach is the development of a more integrated approach to managing water as part of our wider approach to natural resource management. A more integrated approach to the way we manage our water resources will help to promote the coordinated management of water, land and related resources. This in turn will enable us to maximise economic and social benefits in an equitable manner while protecting vital ecosystems and the environment. We believe that this approach will support green growth by providing an essential resource for businesses, as well as providing new opportunities for employment.

To assist the development of this Strategy, we organised a series of workshops[1] and have sought advice from many individuals and organisations. Their expertise and knowledge in water management have been invaluable in informing our proposals. We have also taken account of three recent independent reviews of the water industry and its regulation.[2][3][4]

Scope of the Strategy

Within the context of integrated natural resource management, the consultation on this Strategy seeks views on matters relating to the management of our water systems, including all inland waters, estuaries and coastal waters. In particular, it focuses on how we can increase the resilience of the whole water system in order to maximise the benefits it can bring us and reduce costs to consumers and water companies. There are close links between this Strategy and a range of policy areas across the Welsh Government. We have clearly indicated these links throughout the document and ensured that our approach dovetails with existing policy positions or those under development. These include:

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[1] Workshop Feedback - http://wales.gov.uk/topics/environmentcountryside/epq/waterflooding/publications/water-strategy/?lang=en

[2] Martin Cave 'Independent Review of Competition and Innovation in Water Markets' (April 2009) - https://www.gov.uk/government/publications/competition-and-innovation-in-the-water-markets-cave-review

[3] Anna Walker - 'Independent Review of Charging for Household Water and Sewerage Services' (December 2009) - https://www.gov.uk/government/publications/the-independent-review-of-charging-for-household-water-and-sewerage-services-walker-review

[4] David Gray - 'Review of Ofwat and Consumer Representation in the Water Sector (August 2011)' - https://www.gov.uk/government/publications/review-of-ofwat-and-consumer-representation-in-the-water-sector

- Natural Resource Management. The Water Strategy will inform the National Natural Resource Policy Statement, as currently proposed in the Environment Bill White Paper[5], and the proposed area-based approaches to natural resource planning. These in turn will help to further embed existing catchment based approaches with wider land management opportunities.
- Planning. The Welsh Government recently consulted on a draft Planning Bill[6]. This includes proposals to improve the planning system in Wales to help deliver the homes, jobs and infrastructure that current and future generations need.
- Flood Risk Management. The Welsh Government's approach to flood risk is set out in its National Flood and Coastal Erosion Risk Strategy[7]. Managing the water system as a whole is a key element of this approach.
- Marine and Fisheries Policy. In November 2013, we published a Marine and Fisheries Strategic Action Plan which set the direction of travel for the work of the newly formed Marine and Fisheries Division. This represented an important step in providing comprehensive, integrated marine governance in Wales and is a vital step towards providing comprehensive, integrated marine governance in Wales and reflect the relationship between seas and inland and coastal waters[8].
- Biodiversity. We will launch a Nature Recovery Plan, based on the new ecosystem approach, for consultation in the summer of 2014.
- Land Management. An independent review into the resilience of farming will publish its findings in 2014 and a final consultation on the Rural Development Plan was published in February 2014[9].
- The Welsh Government intends to introduce legislation to embed sustainable development through the activities of public service organisations[10]. This will be done through:
    - A clear focus on what public service organisations should seek to achieve in order to maximise the long term economic, social and environmental well-being of Wales.
    - Informing how the public service organisations prioritise what they do in order to maximise the long term economic, social and environmental well-being of Wales.

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[5] Environment Bill White Paper - http://wales.gov.uk/consultations/environmentandcountryside/environment-bill-white-paper/?status=closed&lang=en

[6] Planning Bill - http://wales.gov.uk/consultations/planning/draft-planning-wales-bill/?lang=en

[7] National Flood and Coastal Erosion Risk Strategy - http://wales.gov.uk/topics/environmentcountryside/epq/flooding/nationalstrategy/strategy/?lang=en

[8] Marine and Fisheries Strategic Action Plan - http://wales.gov.uk/topics/environmentcountryside/foodandfisheries/fisheries/walesfisheriesstrategy/?lang=en

[9] Rural Development Plan Consultation - http://wales.gov.uk/topics/environmentcountryside/farmingandcountryside/cap/ruraldevelopment/rural-development-plan-for-wales-2014-2020/?lang=en

[10] Future Generations Bill - http://wales.gov.uk/topics/sustainabledevelopment/future-generations-bill/?lang=en

- Ensuring that public service organisations are able to monitor and explain their performance and effectiveness.

Structure of the Strategy

This Strategy sets out how we will work with others to make the best use of our water resources.

Section 2 sets out how our policy for water links to wider Welsh Government policy and explains the priorities and principles we will apply in delivering the Strategy.

In **Section 3**, we provide a brief background on the management of the water environment in Wales and the challenges we face.

In **Section 4** we outline our detailed proposals:

- **Water for Nature, People and Business** - This section sets out how we intend our water resources to be sustainably managed, meeting society's needs and offering opportunities for green growth but also protecting and enhancing our natural environment.
- **Taking Action to Reduce Pollution** - This section sets out our proposals to tackle pollution through the adoption of good practices and procedures by land and business managers and by each of us as individuals.
- **Improving the Way We Plan and Manage Our Water Services** - This section set out how we will ensure that our water services remain robust, sustainable and support high quality services both now and in the future.
- **Water Affordability and Delivering Excellent Services to Customers** - This section sets out our proposals for ensuring that people and businesses in Wales have access to affordable water and sewerage services that are sustainable, safe, secure and dependable.
- **Protecting and Improving Drinking Water Quality** - This section set out our approach to maintain the current high standard of our public drinking water quality and ensure that any quality problems are dealt with effectively.
- **A New Approach for Drainage** - This section sets out our approach to ensuring that both waste water and surface water are managed in an integrated way.
- **Supporting Delivery** - This section sets out a number of overarching proposals that will support the delivery of our objectives and strategic outcomes.

Section 5 sets out our next steps in taking forward the proposals in this draft Strategy.

The **Annexes** includes a Glossary and a Consultation Response Template.

2. Our Priorities and Principles

Our Priorities for Action

Four key priorities have informed the development of this Strategy[11] and the way that we manage water can contribute significantly to helping us deliver on these priorities (see Figure 1). These priorities are:

- Driving green growth;
- Using resources efficiently;
- Enhance resilience and diversity; and
- Tackling poverty.

Figure 1 – Key Priorities for Action and Strategic Outcomes

[i] Driving Green Growth
Green growth is a way of fostering economic growth and development, while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies. We want to create the conditions for economic growth that is sustainable, low carbon,

[11] 'Shaping a More Prosperous and Resilient Future' - http://wales.gov.uk/topics/environmentcountryside/consmanagement/natural-resources-management/policy-statement/?lang=en.

cleaner (minimising pollution and environmental impacts), more resilient (to climate change and natural hazards) and socially just.

Adopting a more integrated approach to water management and wider natural resources will help us move to our green growth goal. This needs secure, affordable supplies of raw materials, which we aim to achieve by moving from a linear economy, where we use raw materials to make products that are ultimately destined to become waste, to a more 'circular' economy, where wastage is reduced, reuse and recycling are commonplace and we make the best possible use of all our resources.

[ii] Using resources efficiently
Using resources efficiently is fundamentally important if we are to reduce carbon emissions, save money and lower bills. There are particularly close links between management of our water resources and land management. There are also important links with energy use and related carbon emissions and the chemicals used in water treatment.

[iii] Enhancing Resilience and Diversity
The resilience of our natural resources, including our water resources, is the bedrock on which our society relies. We want to enhance the resilience and diversity of our natural resources and the key sectors that depend upon them, particularly in light of climate change. The Environment Bill will be placing more resilient ecosystems at the heart of decision-making in water as in other areas. Through the work on area-based planning for natural resources, we will further our knowledge of the connections between our ecosystems as a whole, our economy and our communities and the way in which we can manage our water environment for multiple benefits.

[iv] Tackling Poverty
We want to ensure fair and affordable water services for all and are committed to reducing the percentage of people who have water affordability issues in Wales, in line with our broader aims to tackle poverty in Wales.

Our key principles

The delivery of this Strategy, which will set the long-term strategic direction for Welsh Government policy, will be underpinned by a number of key principles. These will inform the way that we work. Our focus is on delivering maximum long term benefits for the economy and growth, for society and for the environment.

- **Sustainable Development**

At the heart of our approach is sustainable development, which underpins all Welsh Government policies. We aim to enhance the economic, social and environmental wellbeing of people and communities across Wales, achieving a better quality of life for our own and future generations in

ways which promote social justice and equality of opportunity and enhance the natural and cultural environment and respect its limits.

- **An integrated approach to water resource management**

Using the ecosystem approach, we will work towards more integrated management of our water resources. Our objective is to promote coordinated development and management of water, land and related resources in order to maximise economic and social welfare in an equitable manner while enhancing the resilience of our ecosystems. This builds on our wider approach to the management of our natural resources.

This will require clear links to other policy areas, such as energy efficiency, climate change, and flood risk and land management. This will also involve wider public involvement and will require a better understanding in society as a whole of the services that the water environment provides.

- **Planning for the long term**

We will consider and plan for the long-term interests of Wales. We will consider carefully the impact of policy proposals, both individually and cumulatively, to ensure that we can achieve the right balance between investing for the long-term whilst keeping the current costs of water bills at a realistic level. Policy proposals or investments must result in long term benefit to the people of Wales, whilst also seeking to ensure that we are making the most of the benefits and economic opportunities that arise from water and not delaying investment to make short term savings at the expense of future bill payers.

- **A clear and transparent regulatory framework**

The delivery of our proposals depends on effective regulation. We provide the strategic direction for water policy in Wales, but it is framed within a complex set of regulatory and operational responsibilities. We want a clear and joined-up regulatory system - both economic and environmental - which is outcome based and meets the requirements of the people and policies of Wales. It is vital that we are able to set policy for this important resource in the context of our own priorities and avoid conflicting policies of the different regulators and water companies which might arise under the current regulatory system. We need to ensure that we have fair and effective regulation which does not place unnecessary burdens on relevant organisations.

- **Prevention rather than cure**

We will face a number of challenges, which are set out in the following chapter, over the coming years and we need to be proactive, rather than reactive, in seeking the best solutions to these challenges. We believe that prevention is better than cure and that taking such an approach will

be more cost effective, for both public funds as well as the wider economy, in the long term. We aim to look for solutions that tackle the root causes of problems rather than treating symptoms of underlying failure.

- **Evidence-based decisions and policy making**

We will base our policies on the best available evidence to ensure we deliver the right results for the people of Wales. Where we identify the need for additional evidence, we will work in close conjunction with regulators, industry, academia and other interested parties to commission or undertake the necessary research. Where appropriate, we will encourage the use of "Citizen Science", involving individuals in gathering information about their local environment.

- **Collaboration**

Successful action to improve our water environment will require a pooling of expertise and a collaborative approach to delivery, sharing our ideas and experiences from across the range of organisations related to water. The delivery of our vision will need support and action by a wide range of stakeholders, including water companies and regulators, businesses, those owning and managing land, public bodies, voluntary groups, local communities and individuals. Much of this will require work at a local level, linked to existing groups such as the River Basin Management Plan Liaison Groups. In the future, Natural Resources Wales will have a crucial role in facilitating work to develop shared responsibility, through the implementation of the area-based approach set out in the Environment White Paper[12].

[12] Environment Bill White Paper - http://wales.gov.uk/consultations/environmentandcountryside/environment-bill-white-paper/?status=closed&lang=en

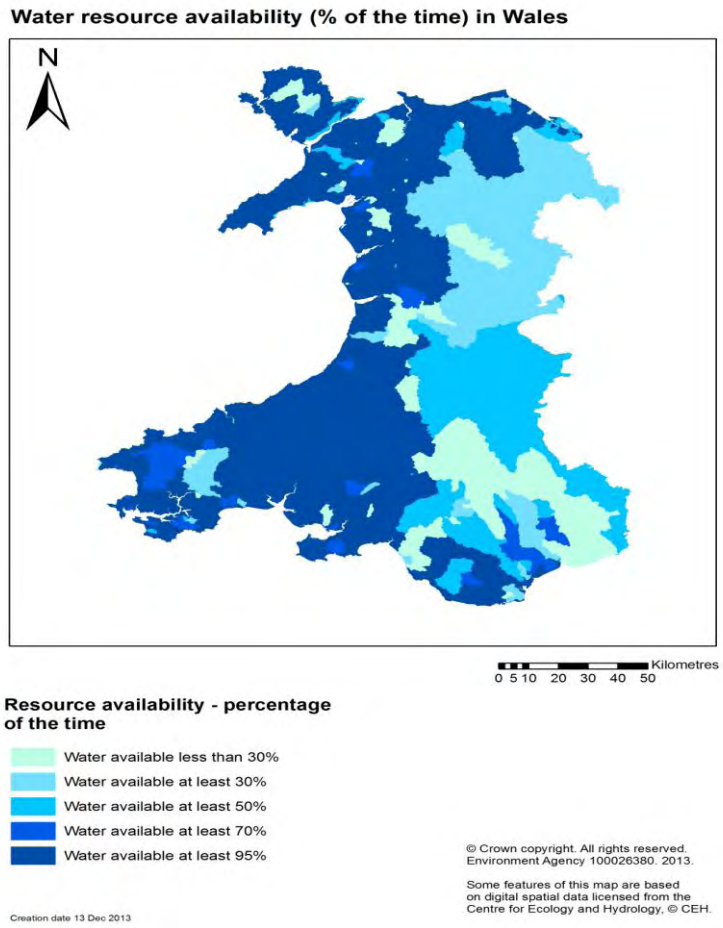
3. Where are we now?

Water in Wales

Wales has a maritime climate characterised by weather that is often cloudy, wet and windy, yet mild. Whilst this might suggest that Wales has an abundance of water for its environment, people and businesses, the picture is more complicated in practice. The topography and geology of Wales means that it can be a challenge to harness this natural resource – we cannot rely on significant groundwater supplies and must therefore try to capture and store much of our water in reservoirs. Our industrial development has also been characterised by a large number of water-intensive industries.

Accordingly, we do not have as much water as we might think to meet the various requirements of the natural environment, people and businesses. Figure 2 provides an indication of the level of commitment of water resources in Wales, expressed as the availability of water for new abstractors. Whilst most catchments in the west and north of Wales have water available, water resources in the eastern part of the country are heavily committed. As a result, in some of these catchments water for a new abstractor could be available for less than 30% of the time.

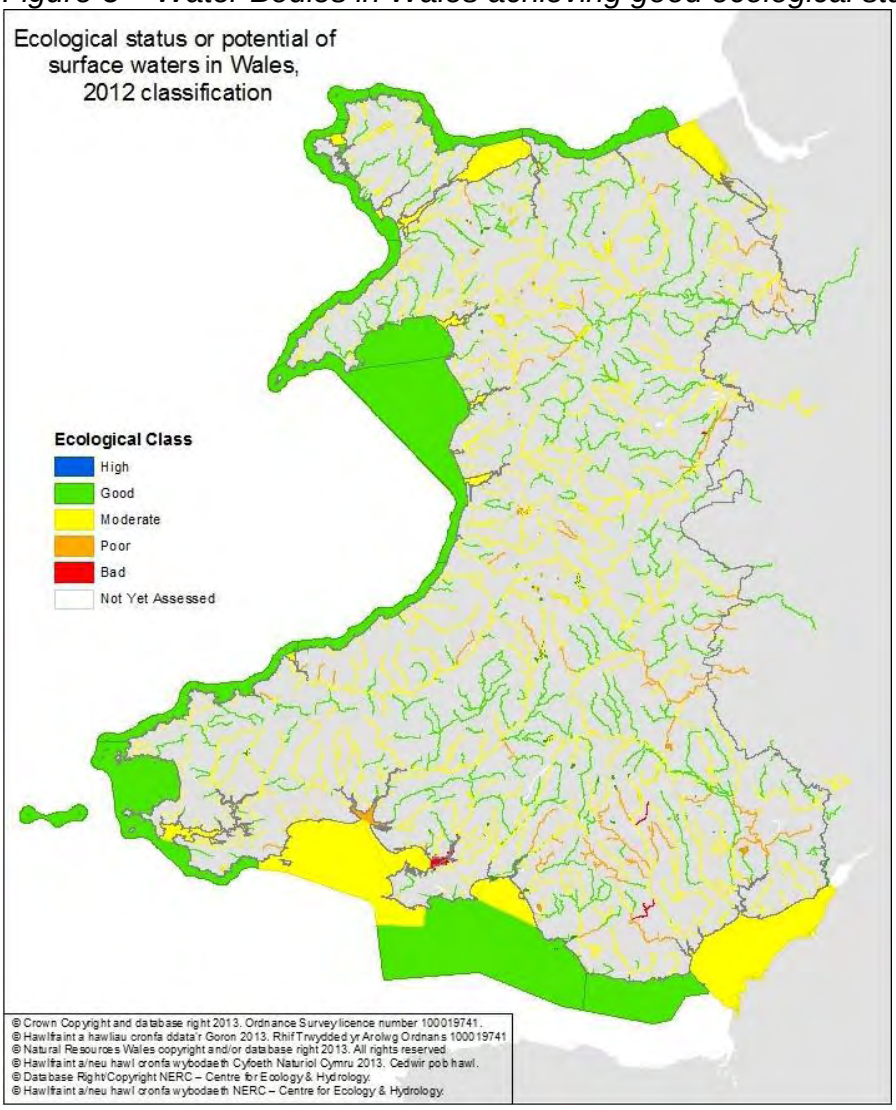
Figure 2 – Water Resource Availability in Wales



The way we manage water in Wales has evolved significantly over time. Historically, we have exploited the water environment to serve the needs of society, often with little regard to the natural environment. For example, dams were constructed to power mills, disrupting the passage of migratory fish and as urban areas grew, rivers and streams were treated as drainage channels and in some cases became sewers. In more recent times, we have often provided incentives for land management practices without understanding the implications for the wider environment, for example in encouraging the drainage of peat uplands for agricultural and forestry, with consequences downstream for flood risk and water quality.

Currently, just over a third of our water bodies achieve good ecological status (under the terms of the Water Framework Directive[13]) as illustrated in Figure 3 below. The reasons for failure are complex and varied and are summarised in Figure 4. We need to improve on this position to safeguard the long term sustainability, resilience and diversity of our water environment and wider ecosystems, on which our society and businesses depend.

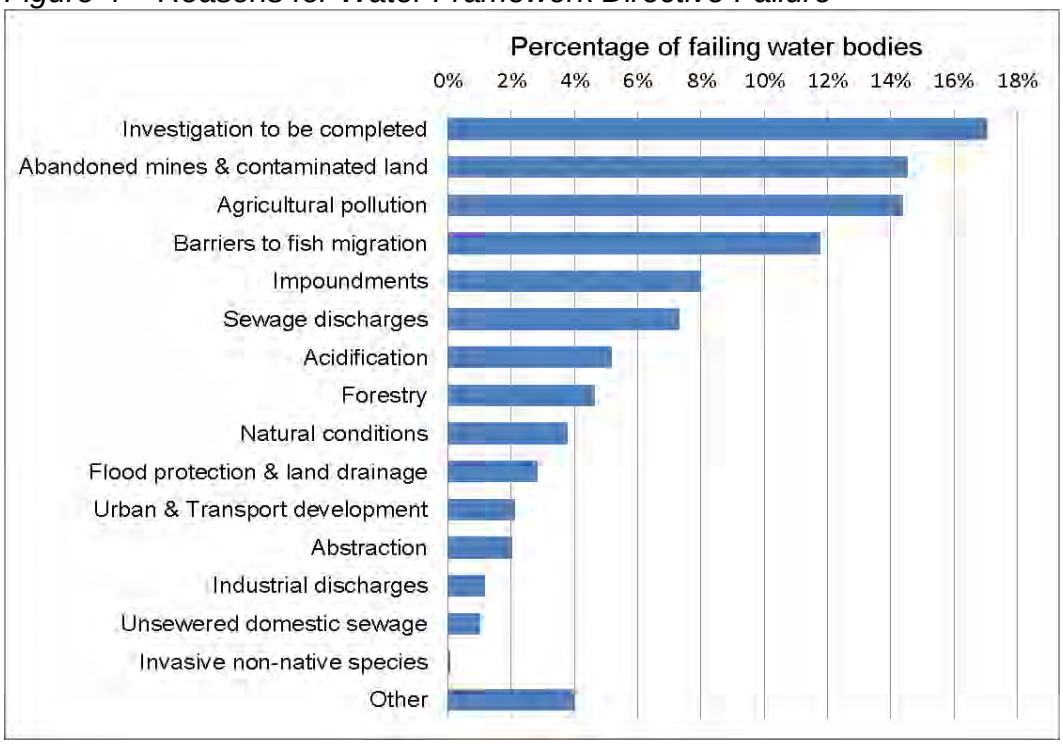
Figure 3 – Water Bodies in Wales achieving good ecological status



[13] Water Framework Directive - http://ec.europa.eu/environment/water/water-framework/

We now understand that a single issue approach fails to take account of wider implications for society and the environment. Our current management of the water environment increasingly aims to provide for the needs of nature, supporting and restoring ecosystems and the services they provide as well as supporting the needs of society.

Figure 4 – Reasons for Water Framework Directive Failure[14]



In particular, the number of water bodies achieving good ecological status is likely to increase by the end of the current River Basin Management Planning Cycle[15] in 2015. The next set of River Basin Management plans, due to be published in 2015, will set out how we aim to reach 100% compliance with the Directive by 2021. We also have 100 bathing waters in Wales designated under the European Union Bathing Water Directive[16], with 89%[17] of these meeting the higher guideline standard, compared with 80% across the UK as a whole. Our aim is to achieve the highest level of compliance possible with this Directive and the Revised Bathing Water Directive, which fully comes into force by January 2015.

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[14] This summary is based on data from February 2013. It includes Reasons for Failure data from 2009 onwards for all types of water body (i.e. rivers, lakes, transitional, coastal and ground waters).

[15] River Basin Management Plans - A River Basin Management Plan will be produced for each river basin district, every six years. The plan will describe the river basin district, and the pressures that the water environment faces. It shows what this means for the current state of the water environment in the river basin district, and what actions will be taken to address the pressures. It sets out what improvements are possible by and how the actions will make a difference to the local environment - the catchments, estuaries, the coast and groundwater.

[16] Bathing Water Directive - http://ec.europa.eu/environment/water/water-bathing/

[17] Bathing Water Quality Results for Wales 2013 - http://wales.gov.uk/topics/environmentcountryside/epq/waterflooding/bathing-water-quality-and-beaches/?lang=en

The evolution of water services

The provision of water services has evolved over the last 150 years and has underpinned our development as a society. Safe and reliable drinking water supplies are critical to public health and economic well-being. These supplies are provided for most properties and businesses in Wales by public water supplies operated by statutory water undertakers, principally Dŵr Cymru Welsh Water, Dee Valley Water and Severn Trent Water. Much of this water is drawn directly or indirectly (via rivers) from reservoirs, most of which were built in the 19th and early 20th centuries. These reservoirs were built to provide secure supplies for use in Wales as well as to serve the Midlands and North West of England. These reservoirs continue to provide a vital supply for these areas - in excess of a third of the volume of abstracted water in Wales supports customers in England. In addition to supplies drawn from surface waters, a small proportion (approximately 3%) of public water supplies is drawn from groundwater sources.

The statutory water undertakers operate a number of water treatment plants and distribution networks which treat and convey water and ensure that it is of an appropriate standard for public consumption.

In rural areas, the dispersed nature of settlement often means that the provision of a public water supply has not been economically viable. In these cases, property owners have private water supplies, mostly from wells, spring and boreholes, although there are also some who use water from streams or rivers. If these are properly protected, installed and maintained they provide a suitable means of water supply. However, these small sources can be vulnerable to pollution and drought.

A total of 17,700[18] private water supplies were recorded by Welsh local authorities in 2012. Local authorities are also responsible for the regulation of private distribution systems, which take mains supplies from the statutory undertaker and distribute them onwards (for example on a mobile home site).

Once water has been consumed, we rely on a network of sewers to collect and dispose of sewage. This network played a vital part in the growth of our cities and towns in the Victorian era. However, these drainage systems simply carried the sewage, often mixed with rainfall and surface water, to a convenient point for discharge into the water environment, resulting in severe water pollution and risks to public health.

Sewerage systems have since progressed, with the introduction of separate drainage systems for foul sewerage and surface water on new developments. The surface water is then discharged directly to the water environment without treatment, based on the assumption that it is uncontaminated. This separation has benefits for the management of the remaining foul sewerage system and at sewerage treatment plants.

[18] Drinking Water 2012 – Private Water Supplies in Wales July 2013 – A report by the Chief Drinking Inspector for Water - http://dwi.defra.gov.uk/about/annual-report/2012/

Treatment systems were developed through the 20th century to reduce the impact of sewage discharges. Treatment technology has progressed from sewage farms and simple sedimentation tanks through to modern treatment systems using only a fraction of the land area of the original farms. These highly complex treatment plants produce effluent of the highest quality, meeting modern standards for discharge to the water environment. However, they are energy intensive and cause significant carbon emissions.

Sewage sludge produced in the treatment process needs further processing before it can be returned to the land as a soil conditioner/fertilizer or burned for energy recovery. In Wales, the focus is on digestion for energy generation prior to recycling for agricultural use and sewage sludge is not burned.

In rural areas not served by sewerage systems, foul sewage from most properties is treated using a septic tank with a discharge into land. These systems are the responsibility of the property owner and must be registered with Natural Resources Wales.

Provision of water services and environmental regulation in Wales

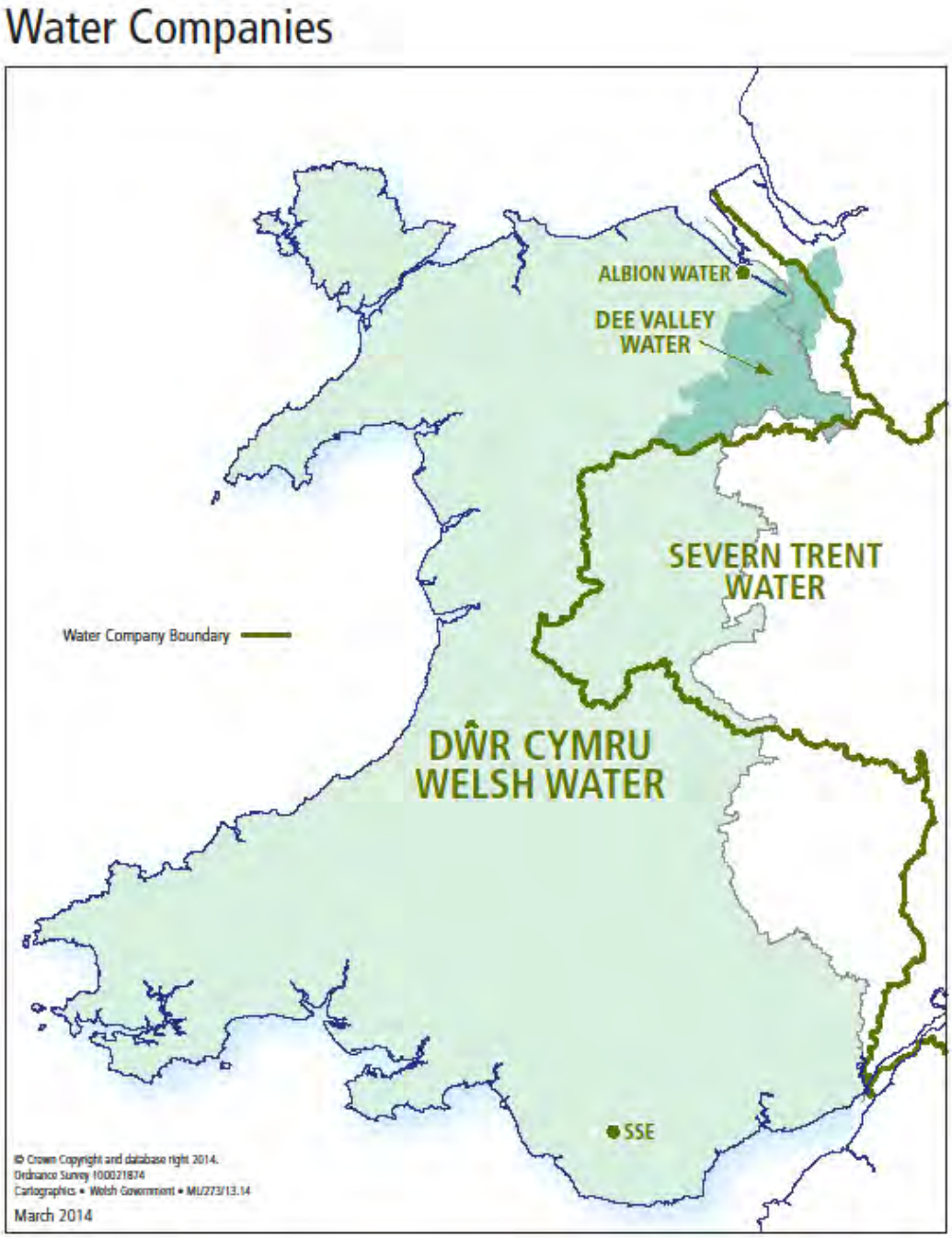
Water services were provided by municipal authorities from the Victorian era onwards. The creation of the water authorities in 1974 brought together a fragmented system of water supply, sewerage treatment, flood risk management and environmental regulation. The water authorities were set up to reflect river catchments. In Wales, there were two Water Authorities, Severn Trent serving the Severn catchment and central Wales, and the Welsh National Water Development Authority serving the rest of Wales and some parts of England. In addition, the Wrexham and East Denbighshire Water Company and Chester Waterworks Company (combined in 1997 as the Dee Valley Water Company) were responsible for water supply in the Wrexham and Chester areas.

The water industry was privatised in 1989, at which time the National Rivers Authority (which became part of the Environment Agency in 1996 and Natural Resources Wales in 2013) became responsible for flood risk management and environmental regulation. Dŵr Cymru Welsh Water and Severn Trent Water were appointed to deliver water and sewerage services in their respective areas, with the Chester and Wrexham based companies providing public water supplies in their areas until they merged to form the Dee Valley Water Company. Two further companies, Albion Water and Scottish and Southern, have since been appointed to deliver services at specific sites in Wales. Figure 5 sets out the boundaries and locations of the Water Companies operating in Wales.

Since the privatisation of the water industry there has been significant investment by the industry in Wales. As a result our environmental and drinking water quality have improved, as have services for Welsh business and domestic customers. The water and sewerage industry in

Wales today delivers for most of us our essential water services providing our basic human needs, not only for drinking water but also for public health, hygiene and sanitation. As a result, most of us enjoy a safe, plentiful and reliable water supply and drainage services at a reasonable cost.

Figure 5 – Water Company Boundaries in Wales



Following privatisation, it has been important to regulate the water industry to protect consumers and the environment. The water industry is regulated by three separate, independent bodies in Wales. These are the Drinking Water Inspectorate, Natural Resources Wales and Ofwat. In addition, the Consumer Council for Water represents customers' interests and acts to resolve disputes.

Alongside water company investment, work by Natural Resources Wales, often in partnership with landowners and voluntary groups, has resulted in many improvements to water ecology, for example through the removal of obstructions which disrupt river ecology. Implementation and enforcement of environmental regulations to protect the environment by Natural Resources Wales and of drinking water standards by local authorities and the Drinking Water Inspectorate have also supported improvements in these areas.

In 1999, Wales achieved devolution for a number of areas including water supply, water resources management, water quality, the representation of consumers of water and sewerage services and flood risk management and coastal protection. These powers allow the Welsh Government, with its close understanding of water resources issues in Wales, to identify the appropriate way forward for water management in Wales. However the National Assembly does not have full legislative competence in relation to water and sewerage.

In managing the water environment and water services, the Welsh Government takes full account of its international obligations. In particular, there are a number of European Directives which influence our approach (see Box 1 for details). The most significant of these are the Drinking Water Directive[19] and the Water Framework Directive[20] (WFD) introduced in 2000. The WFD introduced the concept of catchment management as the basis for the management of water resources and required the establishment of river basin districts and for each of these a river basin management plan. It also encouraged active involvement of all interested parties in the production, review and updating of these plans.

[19] Drinking Water Directive - http://ec.europa.eu/environment/water/water-drink/.
[20] Water Framework Directive - http://ec.europa.eu/environment/water/water-framework/

Box 1 – European Directives relating to water resource management

Water Framework Directive - 2000/60/EC
This Directive established a framework for water protection and management. Its objectives include preventing and reducing pollution, promoting sustainable water use, environmental protection, improving aquatic ecosystems and mitigating the effects of floods and droughts.

Nitrates Directive - 91/676/EC
This aims to protect waters against pollution caused by nitrates from agricultural sources through a number of measures. These include monitoring surface waters and groundwater, designating vulnerable zones, issuing codes of good agricultural practice, implementing action programmes and evaluating the actions implemented.

Bathing Water Directive - 2006/7/EC
This Directive focuses on the quality of bathing water in Member States. It addresses those waters in which bathing is authorised by the national authorities and regularly practised by a significant number of bathers. It does not apply to swimming pools.

Groundwater Directive - 2006/118/EC
This Directive is designed to prevent and combat groundwater pollution. Its provisions include: criteria for assessing the chemical status of groundwater, criteria for identifying significant and sustained upward trends in groundwater pollution levels, and provisions for defining starting points for reversing these trends and preventing and limiting indirect discharges (after percolation through soil or subsoil) of pollutants into groundwater.

Habitats Directive - 92/43/EEC
Birds Directive - 2009/147/EC
These Directives form the cornerstone of Europe's nature conservation policy, built around two pillars, the Natura 2000 network of protected sites and species protection. The Habitats directive protects over 1,000 animals and plant species and over 200 so called "habitat types" (e.g. special types of forests, wetlands, etc.) of European importance.

Urban Wastewater Treatment Directive – 91/271/EEC
This aims to protect the environment from the adverse effects of urban waste water discharges and discharges from certain industrial sectors. The Directive concerns the collection, treatment and discharge of these waste waters.

Environmental Liability Directive – 2004/35/EC
This directive deals with the prevention and remedying of environmental damage based on the polluter pays principle.

Drinking Water Directive – 98/83/EC
This Directive relates to the quality of water intended for human consumption and covers both public and private supplies, setting standards for quality and for monitoring.

The challenges – why we need change

Water is not a limitless resource which can easily be replenished. It needs careful management to ensure the long term needs of the environment, people and economy can be met. It exists in a dynamic system of wetlands, rivers, aquifers, lakes, estuaries and coast. It is reliant on and heavily influenced by our weather patterns. It comes to us as consumers via a complex collection, storage, treatment and delivery system that is costly to build and operate.

In Wales we face a number of challenges including climate change, population increase and an increased demand for water which will affect how we manage our water resources. These all have implications for our water environment, the water industry and its regulators, land managers as well as the wider population over the next twenty five years and beyond.

Impacts of climate change

We understand that our climate is changing, but there is some uncertainty about what this means for us as individuals and in planning how we will manage our water resources in the future. The best available understanding is provided by the latest UK Climate Projections 2009 (UKCP09)[21].

Although there is some confidence that average temperatures will increase, the impact on rainfall patterns is more difficult to project. The projections suggest that temperatures in Wales will increase and that there will be changes in seasonal patterns for rainfall, with an increase in winter and decrease in summer, with extreme weather events becoming more frequent and intense.

The consequences for water resources are potentially significant. Warmer weather is likely to result in greater evaporation from our many reservoirs and from rivers and in increased demand. More intense rainfall will cause more surface water flooding and wash more pollutants into our streams, rivers and coastal waters. It will also reduce the recharge of water into our underground water resources in the areas of Wales where these are important. Although there is a significant amount of uncertainty about future rainfall, overall impacts on river flows are likely to see lower summer flows and possibly higher river temperatures.

In addition, drought conditions are more likely to occur, with a Met Office study[22] suggesting a ten fold increase in droughts by 2100. Events like the 1975-76 drought could occur on average every 10 years. Our reliance on surface water resources in Wales, means we need to be sure that our water infrastructure will be adequate for these predicted conditions.

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[21] http://ukclimateprojections.defra.gov.uk

[22] An extreme value analysis of UK drought and projections of change in the future, Met Office, 2010. Journal of Hydrology

The provision of sewerage and sewage treatment services in Wales at a reasonable cost will be affected by these changes. There may be increases in the frequency of spills from combined sewer overflows, sewer flooding and “tide locking” of sewers (i.e. the closure of drainage outfalls caused by high tidal water levels).

These changes are likely to increase the stress on the water environment. Increases in pollution, reduced flows and possibly higher temperatures will impact on the wildlife that depends on rivers and lakes. For example, sensitive migratory fish species such as salmon, sea trout and shad could be affected. For water companies, if water quality declines they can face additional costs in treating that water for public consumption.

Population growth

Wales has seen a 5% increase in its population since 2001 to 3.06million in 2011[23]. This trend is likely to continue with the population projected to increase by 5% to 3.17million by 2020 and 12% to 3.37million by 2035[24]. The population is projected to get gradually older, and the number of people aged 65 and over is projected to increase by around 55 per cent between 2010 and 2023. This increase in population and the ageing population increases demand for food, water and other basic services. The estimated number of households in Wales grew from around 1.1million in 1991 to nearly 1.3million by 2009. As a proportion, the number of one person households increased from 25% of all households in 1991 to 31% in 2009[25]. This trend is likely to continue, causing greater pressures on land for housing, food production, water demand and energy supply.

Similar population trends in England will increase reliance there on secure supplies of water from Wales.

Changing demand

Although there has been a major decline in the water needs of industry in Wales, domestic consumption has been rising. Households now use about 52%[26] of the water put in to public supply. The average person in England and Wales uses 150 litres[27] of water (about two full baths) a day. The majority of water used in the house is used for washing and toilet flushing, but it also includes drinking, cooking, car washing and

[23] 2011 Census - http://www.ons.gov.uk/ons/guide-method/census/2011/index.html
[24] Population projections produced by the Office for National Statistics - http://www.ons.gov.uk/ons/taxonomy/index.html?nscl=Population+Projections
[25] Household estimates, 1991-2009 SDR 23/2011 - http://wales.gov.uk/statistics-and-research/?lang=en
[26] Environment Agency – Save Water - http://www.environment-agency.gov.uk/homeandleisure/beinggreen/117266.aspx
[27] Environment Agency – Save Water - http://www.environment-agency.gov.uk/homeandleisure/beinggreen/117266.aspx

watering the garden. We each use almost 50%[28] more water than 25 years ago. The changes in demand will have an impact on water resources and sewer and sewage treatment capacity.

A more integrated approach

We have to meet these challenges to achieve a healthy, functioning environment which is the basic building block of social and economic prosperity. However, we are not always managing our natural resources, including land and water, in a way that takes adequate account of the connections between environmental, social and economic outcomes, or in a way that emphasises the importance of sustaining our environment in the long-term in order to improve the quality of life for present and future generations.

We have made improvements in the way that we manage our water resources, driven in part by European legislation and meeting set standards. However, we want to do more than simply meet these standards. We wish to build upon this current practice to take a more integrated approach to natural resource management as a whole. This means that decisions affecting all natural resources will seek the best overall outcome, taking account of economic, social and environmental issues, and build resilience into our ecosystems. We believe that this wider approach to managing our natural resources and balancing benefits for people in terms of jobs, their livelihood and health with impacts across the natural environment will enable us to make the best use of our resources over the long term.

We want the people of Wales to recognise how valuable water is to Wales as a resource, to take pride in our water environment and to make the best possible use of that water. We must recognise that water is essential for many business sectors in Wales, including agriculture, food and beverage production, energy generation, manufacturing and tourism. Well managed water resources could offer opportunities to attract businesses requiring secure, high quality water to invest in Wales, supporting our aims of green growth and job creation.

[28] Environment Agency – Save Water - http://www.environment-agency.gov.uk/homeandleisure/beinggreen/117266.aspx

4. Our Proposals

Our proposals for developing a more integrated approach to managing our water resources reflect our wider approach to Natural Resource Management[29]. This involves promoting the coordinated development and management of water, land and related resources in order to maximise economic and social welfare in an equitable manner while increasing the resilience of vital ecosystems.

In this chapter, we focus on our proposals for change:

- **Water for Nature, People and Business** - This section sets out how we intend for our water resources to be sustainably managed, meeting society's needs and offering opportunities for green growth but also protecting and enhancing our natural environment.
- **Taking Action to Reduce Pollution** - This section sets out our proposals to tackle pollution through the adoption of good practices and procedures by land and business managers and by each of us as individuals.
- **Improving the Way We Plan and Manage Our Water Services** - This section set out how we will ensure that our water services remain robust, sustainable and support high quality services both now and in the future.
- **Water Affordability and Delivering Excellent Services to Customers** - This section sets out our proposals for ensuring that people and businesses in Wales have access to affordable water and sewerage services that are sustainable, safe, secure and dependable.
- **Protecting and Improving Drinking Water Quality** - This section set out our approach to maintain the current high standard of our public drinking water quality, ensure compliance with the Drinking Water Directive and that any quality problems are dealt with effectively.
- **A New Approach for Drainage** - This section sets out our approach to ensuring that both waste water and surface water are managed in an integrated way.
- **Supporting Delivery** - This section sets out a number of overarching proposals that will support the delivery of our objectives and key outcomes.

For each of these sections, we provide the key issues that need to considered and addressed, our proposed principal actions and specific consultation questions.

[29] Environment Bill White Paper - http://wales.gov.uk/consultations/environmentandcountryside/environment-bill-white-paper/?status=closed&lang=en

4.1 Water for Nature, People and Business

Key Issues

Water and Natural Resource Management

Water is a vital natural resource supporting a wide range of natural ecosystems in Wales. We need to constantly challenge ourselves to ensure that we are managing this resource effectively for the long-term to protect and optimise the benefits provided by water whilst also delivering economic, social and environmental goals. Taking an integrated approach to water management means placing water firmly within the context of natural resource management. We will explore changes to the regulatory system to ensure that it is both flexible and incentivizes improvements in land management practices. (These are set out in more detail in the *Section 4.2 Taking Action to Reduce Pollution pp33-38*).

Catchment management is at the heart of our integrated approach. Whilst historically we may have tended to look at water management issues in isolation, our work on implementing the Water Framework Directive[30] has emphasised the benefits of taking an integrated approach to river catchment management. This approach to managing water not only requires account to be taken of local circumstances but also recognises the connectivity between land and water, and the need to manage both together. For example, the way that uplands are managed can affect the ability of peaty soils to retain rainwater. Improved drainage of such areas for forestry or grazing can cause more rapid run-off following rainfall, with damaging consequences downstream for flood risk and water quality. High levels of livestock can have a similar effect, as soil is compacted, resulting in rapid run-off of water and increased risks of erosion. With appropriate land management[31], such adverse impacts can be prevented or even reversed, reducing flood risks, improving water quality and increasing water availability as rainwater is held in the land and released slowly.

The Directive requires Member States to establish river basin districts and for each of these a river basin management plan. In Wales, we have two river basin districts which are shared with England, the Severn and the Dee and a third, Western Wales, which is wholly in Wales. These are set out in Figure 6. These plans are reviewed every six years, with the next plans due to be introduced in 2015, and help us to manage our water resources effectively.

[30] This Directive established a framework for the protection of inland surface waters (rivers and lakes), transitional waters (estuaries), coastal waters and groundwater. It aims to ensure that all aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands, meet 'good status' by 2015.
[31] www.werh.org/documents/TimPagellaPontBrenCaseStudy.pdf

Figure 6 –Water Framework Directive River Basin Districts

Because of the complex legislation relating to water, the need to manage catchments shared with England and the range of scales, from local area to catchment and even national, we need to ensure that we are making the best use of our limited resources. We will continue to work with Natural Resources Wales to review implementation of all water-related Directives to ensure we identify any additional synergies, opportunities for simplification and cost-efficiencies in the way we implement Directives.

At a local level, improved catchment management will help us to prioritise our work to ensure it is better suited to each specific catchment. We believe there is scope to be smarter about the way we approach and implement Directives, using the catchment approach and improved community engagement to guide and drive this process and taking more account of local circumstances where compliance with Directives allows us to.

We will supplement this catchment-level water management with practical actions. Work on the development of this Strategy has indicated that poor land use management represents a significant pressure on the water environment within Wales.

The existing Rural Development Plan supports land management interventions aimed at improving water quality and reducing flood risk. A consultation on our final proposals for the Wales Rural Development Programme (RDP) for 2014–2020[32] was published in February 2014. The total projected budget for the RDP for Wales 2014-2020 is £953m across the programme period, with 60% (£572m) allocated to area based measures with specific reference to the Water Framework Directive. The proposals in the consultation include advice on water related issues such as land and farmyard management. For example, good practice in the feeding and watering of livestock can prevent damage to land and stream banks that might otherwise cause erosion and pollution. In addition, good practices in waste storage, nutrient management planning and silage production which also contribute to the protection of the water environment will be considered. The proposed Plan includes a mixed capital and revenue mechanism to support on-farm and forest improvements linked to, amongst other things, welfare and environment standards. Subject to approval by the European Commission, support will be extended into non land-based businesses and interventions might be possible that address the problems linked to pollution from metal mines.

The Glastir Advanced scheme will remain the main mechanism for targeting activity to meet the Water Framework Directive requirements that will help to improve water quality and management by addressing issues along a watercourse rather than being restricted to a farm by farm approach. This will be complemented by infrastructure improvements delivered through the Sustainable Production grant scheme.

Our approach to catchment management and River Basin Management Plans will also help inform the development of wider policy for natural resource management. The Environment Bill White Paper proposes the development of an area-based approach to natural resource management[33]. This anticipates a planning and priority-setting process that coordinates resource use within a particular area, which might

[32] www.wales.gov.uk/topics/environmentcountryside/farmingandcountryside/cap/ruraldevelopment/rural-development-plan-for-wales-2014-2020/?lang=en
[33] Environment Bill White Paper pp.14-50- http://wales.gov.uk/consultations/environmentandcountryside/environment-bill-white-paper/?status=closed&lang=en

include catchments. The assessment and co-ordination of resource use will to be organised around ecosystems and the services they provide.

Improving civic engagement

Our water environment is something in which we all have an interest. Water is essential for life and has shaped our landscape and our sense of place – our local river or stream, a favourite stretch of coast or a mountain lake. This is about much more than the relationship we might have with our water services company. To recognise this wide ownership, a focus on effective civic engagement and involvement is at the heart of our approach to both water management and wider natural resource management, as set out in the Environment Bill White paper. We believe, and you have told us, that better, more focused decisions can be made on water management issues with the involvement of local community groups, local businesses and individuals. A participatory approach involving local communities will ensure that those that manage water, those that benefit from good quality, reliable water and those that have the potential to have an impact on our water resources are part of the agenda-setting and decision-making process.

The Water Framework Directive goes some way to achieving the aim of community involvement with its River Basin liaison panels. However, their large scale makes it difficult to address local issues. We expect Natural Resources Wales, as the regulatory body with responsibility for ensuring the effective management of our water environment, to work with local authorities and water companies to build on its work on River Basin Management Plans and ensure extended and improved community involvement at a catchment and local area level. This will help to inform our approaches to water management as well as wider natural resource management and ensure that water and land management actions at a catchment level are integrated with our proposed area based approach to natural resource planning, with community knowledge and experience helping to identify challenges and opportunities.

We will encourage a flexible approach to this engagement rather than a “one size fits all solution”, as we recognise that in some areas catchment scale working may not be the best way to achieve the desired outcomes. It may be that we need to work on a landscape scale or perhaps in some areas, where there are specific problems, a water body scale will be the best approach. Working at these scales will help us to understand the local context, such as economic opportunities or climate change risks, which vary throughout Wales.

Making the most of our Water

Water provides a very wide range of benefits for our society, including jobs, recreational opportunities, energy production and our health. However, many of these benefits are difficult to put a value on. In order to ensure that we make the best possible use of water and that we get the greatest benefit from our natural environment for the people of Wales, we

need to improve the abstraction licensing system, find ways of valuing the services water provides and to take individual responsibility for the way we use water.

Well-managed water resources

We have highlighted in Chapter 3 (pp10-20) the challenges we face in ensuring that we have enough water available for people, business and nature. The Welsh Government and Natural Resource Wales are responsible for the management of water resources, including the regulation of water abstraction. Water abstraction is the process of removing water from natural sources like rivers, lakes and aquifers and is how we meet most of our water supply needs in Wales. If we exclude water used in the energy sector, which is immediately returned to the environment, by far the majority of water abstracted in Wales goes to support the public water supply, with abstraction for industrial purposes a significant element. It is regulated through a system of licences issued by Natural Resource Wales. The licensing of water abstractions was established in 1963 to protect downstream abstractors, but it does not provide adequate flexibility to address the challenges of future water availability or the need to protect our natural environment[34].

To ensure that we have robust and resilient water resources which support the green growth objectives of new jobs and economic growth, and are licensed equitably, we are reviewing the current water abstraction licensing system, in conjunction with the UK Government. We have

[34] Environment Agency – Current and Future Water Resources - http://www.environment-agency.gov.uk/research/library/publications/40731.aspx

consulted on proposed changes to the abstraction licensing system and the outcome of this consultation will inform future water resource management policies in Wales.

The consultation[35] focused on two options for changes to the current abstraction licensing system. If the consultation responses are broadly supportive, our implementation will aim to minimise any disruption to abstractors' operations.

The abstraction licensing system also includes a number of historic exemptions which allow unconstrained water abstraction for certain purposes, such as navigation and quarry dewatering, or in certain geographical areas. In order to manage water resources in a fair and comprehensive way, we need to bring these abstractions into the licensing system. In order to achieve this, we will be consulting jointly with the UK Government in the last quarter of 2014 on the best way to do this.

Valuing water

Our water assets provide us with a range of important ecosystem services. Some of these services have a clear direct or marketable value, such as water resource supplies. However, it is difficult to place a market value on other services that we rely on or value, such as water purification and water retention.

We believe that we need to try to place a value on water, allowing the economic value of water to help determine its best use. One way to do

[35] Welsh Government – Making the Most of Every Drop - http://wales.gov.uk/consultations/environmentandcountryside/making-the-most-of-every-drop/?lang=en

this is to put a value on the services provided by our natural resources and establish a payment for ecosystem services (PES) market.

PES schemes involve payments to the managers of land or other natural resources in exchange for the provision of specific ecosystem services, such as protecting water quality or retaining water. For example, it might be appropriate to make payments to land managers to take steps in the management of their land or livestock that reduces the risk of soil erosion and adverse consequences for water quality. Such schemes give us the ability to link market value to the services the natural environment provides as a result of the way it is managed. In this way, payment for ecosystem services can be central to our ambition for green growth, particularly in the rural economy. We think that there is potential for PES schemes to work well in relation to water as benefits in the lower part of catchments are often influenced by interventions further up the catchment.

We have commissioned a study, due for completion by Spring 2014, to look at the potential mechanisms that might be used to develop a payment for ecosystem services market in Wales. The study is considering potential participants in such a market, what a market could look like in Wales and what the Welsh Government's role could be. It is important to assess what the opportunities are, for both the owners of our natural capital and for the businesses which may benefit from any market that is created. We are also consulting, as part of the Environment Bill White paper[36], on whether Natural Resources Wales requires new powers in relation to PES regulation or accreditation. The recommendations from this study and the response to the Environment Bill consultation will help finalise our proposals on the development of PES schemes in Wales.

Individual actions

We want to ensure that we make the best possible use of the water which we abstract from the natural environment. Reducing waste and seeking improved water efficiency has a central part to play in delivering this. The benefits of more efficient and sustainable use of water include a reduced carbon footprint, as a result of having to treat and pump less water, as well as reducing both the amount of water used and energy required to heat it, particularly in the home. In addition, a reduction in water supplied leads to less wastewater, easing pressure on sewer capacity, pumping stations and treatment systems. This can contribute to reduced or deferred need for investment in infrastructure, lower energy requirements, reduced carbon emissions and increased resilience to climate change. Leakage and promoting the efficient use of water are covered in detail in the following *section 4.3 Improving the way we plan and manage our water systems (pp39-44).*

[36] Environment Bill White Paper - http://wales.gov.uk/consultations/environmentandcountryside/environment-bill-white-paper/?status=closed&lang=en

We can all contribute to reducing waste and improving water efficiency, as individuals in our homes as well as businesses supplying and using water. We will continue to work with Ofwat, water companies and Natural Resources Wales to achieve this.

Wider community benefits

Well managed water resources provide a wide range of benefits, including direct support for jobs and green growth. As part of our work to ensure that we are making the best use of all of our natural resources we will work across the Welsh Government to develop the tourism and recreational opportunities of our inland and coastal waters.

In seeking the benefits offered by our water resources for job creation and green growth in tourism and recreation, we need to take account of health, safety and environmental concerns, which should be primary consideration when assessing these opportunities. These risks will vary depending on the activity, for example fishing, kayaking or swimming, and the nature of the site, and each needs individual assessment. For example, water companies own and manage many reservoirs and surrounding land in Wales with the potential for a wide range of recreational use. We will work with water companies and other reservoir owners to maintain and improve appropriate access and recreational use of these assets.

Some benefits from our water environment are more difficult to put a value to. Access to water features, often linked to green space, can be beneficial to wellbeing and good physical and mental health in both urban and rural areas. Well managed schemes across Wales are already

making use of water features for educational purposes and improving public appreciation of the need for well managed water resources. We will work across Welsh Government to encourage the improvement of the existing built environment through the use of water and to improve the way water is integrated into the design of new developments through the WSUD approach – *see Section 4.6 A New Approach to Drainage (pp53-58).*

Supporting business

The availability of resilient water services is essential to support business. In Wales there are already companies who rely on water to support everything from paper and steel production through to food processing and brewing – the effective management of water underpins thousands of jobs in these sectors. In recent years, many industrial users have reduced their water use through improved efficiency and recycling in order to reduce operating costs. Alongside industrial users, well-managed water resources also support jobs in areas such fisheries - more than 55,000 rod licences are issued in Wales for recreational fishermen, as well as 50 commercial freshwater licenses - shellfisheries and employment in the marine environment. The availability of high quality water supplies from rivers and groundwater, and through water companies, offers important opportunities to attract businesses to Wales. In particular, we need to look further afield, to understand the impact outside of Wales of the water needed to produce the food and materials we use in our daily living. With increasing pressure on water resources worldwide, there may be opportunities to encourage the use of our water resources to replace products currently imported from parts of the world where water is scarce.

By ensuring that our water resources are well managed, we can support green growth and the creation of new jobs. For example, the availability of water has important links with energy production as outlined in Box 2. In particular, hydropower generation is a low carbon source of energy which can contribute to rural development which the Welsh Government is keen to encourage and support financially. We have seen a significant increase in the number of small scale (less than 100kw) hydropower development projects in Wales recently. This is reflected in the number of applications for support from community hydro schemes to the Welsh Government's Ynni'r Fro[37] programme.

[37] http://www.energysavingtrust.org.uk/wales/Communities/Finding-funding/Ynni-r-Fro-programme
Since 2010, Ynni'r Fro has received 53 applications from community hydro schemes of which approximately 25 of these should mature over the next two to three years.

Box 2 - Water and Energy

Electricity generation
Large volumes of cooling water are needed for the efficient generation of electricity in most thermal (coal, gas, biomass) and nuclear power stations. In Wales, most power stations use coastal or estuarine waters and the water is almost all returned to the environment. Power generation accounts for the largest volume of water used for industrial purposes in Wales.

Hydropower
This converts the energy in falling water to electricity and has been exploited for more than a hundred years. Advances in technology and the introduction of incentive schemes have made many new small scale hydropower schemes viable. Water is usually diverted away from a stream to pass through the turbine. This can result in an obstruction to the passage of wildlife and reduced water flow in the natural channel and therefore needs careful management.

Energy from sewage
Anaerobic digestion of sewage sludge produces a gas containing methane and sludge containing valuable nutrients. The gas can be used to generate electricity, helping to reduce sewage treatment works operating costs and reducing greenhouse gas emission. The treated sewage sludge can be recycled as a soil conditioner to provide organic matter and nutrients on land, reducing the need for artificial fertilizers.

Fracking
The extraction of hydrocarbon gases from underground rocks using a technique known as “Fracking” has increased rapidly in recent years, especially in North America. The process involves drilling into the rocks and pumping a fluid into it under high pressure in order to fracture the rocks and stimulate the flow of gas to the well. The fluid is principally water with a number of additives designed to aid the fracturing process. It is essential that a source of water is available for fracking and it is also crucial that careful controls are in place to prevent any contamination of naturally occurring groundwater.

Each of these has important implications for water management and we need to balance their impact on the water environment against the benefits for the national and local economy and on carbon dioxide emissions.

Principal Actions

- We will continually review the implementation of domestic and international legislation to identify synergies, opportunities for simplification and cost-efficiencies and to take account of catchment priorities.
- We are consulting on a final, revised Rural Development Plan which, by integrating our natural resource management will ensure, subject to European Commission agreement, that the

water environment is taken into account in the delivery of advice and the design of incentives.

- We will work with Natural Resources Wales to build on the existing River Basin Management Liaison Panels as a means of broadening community involvement in the development of water policy at a more local catchment level. This will help inform, and will evolve with, the development of the area based approach to natural resource management.
- We are reviewing the abstraction licensing system to inform future policy in relation to water resource management. We have recently consulted on options and will publish our final approach in 2014.
- We will bring exempt abstractions into the licensing system.
- We will assess the opportunities for both the owners of our natural capital and for businesses from the establishment of a payment for ecosystem services market.

Consultation Questions

1. In looking at implementing legislation, are their any specific areas that you would like us to focus on?

2. Do you have any suggestions for improving and extending community involvement in integrated catchment management?

3. We have highlighted the close link between land management and the water environment. Are you aware of examples of good practice which could be reproduced elsewhere?

4: What opportunities do you see for developing PES schemes in relation to water management in Wales? What should be the role of Government in developing these schemes?

5. What more could we do to make the most of our water, particularly in terms of supporting our agenda for green growth?

4.2 Taking Action to Reduce Pollution

Key Issues

Tackling diffuse pollution

Action to prevent and control water pollution is vital for the protection of water quality. The impact of major point source (from specific sites such as sewage treatment works or industrial premises) has been reduced as a result of regulatory controls and company investment. However, there is still a threat to the water environment from diffuse pollution. Diffuse pollution occurs as the result of a wide range of activities resulting in often small sources of pollution which can be difficult to identify and control. They occur in all economic sectors, as well as resulting from our own activities as individuals. This means that we can all play a part in tackling diffuse pollution.

Poor land management practices in both urban and rural areas can result in diffuse pollution. In order to ensure that we have a joined up approach to land and water management which addresses diffuse water pollution, we will work with sectors such as construction, forestry and agriculture to understand, review and, where appropriate, change current practices. The River Basin Management Plans[38][39] indicate that that poor land

[38] Environment Agency Dee River Basin Management Plan - http://www.environment-agency.gov.uk/research/planning/124748.aspx,
[39] Environment Agency West Wales River Basin Management Plan - http://www.environment-agency.gov.uk/research/planning/125095.aspx

management represents a significant pressure on the water environment in Wales, a view supported through our initial consultation on this Strategy. Further evidence of the extent of the problem was established in a series of "River Walk Surveys" undertaken for Environment Agency Wales in 2011.

Natural Resources Wales has produced a diffuse pollution action plan[41] which will help to guide and inform local priorities as part of the River Basin Planning[42] approach. The plan highlights eight key areas of concern and outlines the actions Natural Resources Wales intends to take to work with those causing the problems to reduce diffuse water pollution.

Box 3 – Eight Priority areas for Tackling Diffuse Pollution

Natural Resources Wales have identified eight priority areas for tackling diffuse pollution in their Diffuse Pollution Plan for Wales. These are:

- industrial estates,
- small sewage discharges serving private properties, such as septic tanks ,
- drainage misconnections,
- surface water drainage from developed areas,
- livestock management,
- land management,
- storage – slurry, fuel, oils, chemicals,
- mine waters

Alongside the implementation of this plan and in order to ensure that we have a joined up approach to land and water management which addresses diffuse water pollution, we will work with Natural Resources Wales and sectors such as construction and agriculture to develop a shared understanding of the problem and to identify and implement improvements to current practices.

Providing advice and funding to prevent pollution and improve land management practices

We advocate a focus on preventing pollution occurring in the first place. We expect our regulators to be proactive in their approach to working with

[40] Environment Agency Severn River Basin Management Plan - http://www.environment-agency.gov.uk/research/planning/124941.aspx
[41] Natural Resources Wales – Diffuse Pollution Action Plan - http://naturalresourceswales.gov.uk/our-work/policy-advice-guidance/water-policy/?lang=en#.UzQs4vl_sb0
[42] River Basin Management is a continuous process of planning (to develop River Basin Management Plans) and delivery. The Water Framework Directive introduces a formal series of 6 year cycles. The first cycle will end in 2015 when, following further planning and consultation, the River Basin Management Plans will be updated and reissued.

landowners and businesses by providing advice and guidance to tackle the root causes of pollution. We expect Natural Resources Wales to regularly review the effectiveness of their guidance and the delivery of advice.

For businesses, Welsh Government (through Business Link Wales) and Natural Resources Wales already provide a wide range of pollution prevention resources which aim to help reduce risks with simple to apply advice. We expect Natural Resources Wales to identify how best to target and deliver these resources in the future, working with other government agencies and business partners where appropriate.

We recognise the importance of supporting landowners to implement sustainable land management practices. With approximately 80% of land used for agricultural production, land management plays a key role in determining the quality of both our land and water environment. Figure 4 indicates that agricultural pollution is one of the key reasons for Water Framework Directive failure. Most of these failures relate to silage and slurry handling. Nutrient management plans can improve land management practices, helping to reduce the loss of nutrients such as nitrogen and phosphorous from fields to water courses and therefore can provide financial benefits to farmers as well as protecting the water environment. Our current RDP includes the provision of funding for the development of nutrient management plans in certain circumstances. Our proposed Plan for 2014-20 includes advice and funding towards nutrient management plans through the Farm Advisory Service.

The Nitrates Directive requires monitoring of nitrates in water and where necessary designation of land as a Nitrate Vulnerable Zone to provide the appropriate protection. Natural Resources Wales will continue to closely monitor nitrates in water bodies and will also work closely with farmers and landowners to help them reduce the loss of nitrate from their land and in particular to identify areas where action now could prevent the requirement for designation in the future.

We will continue to work across the Welsh Government to ensure that the Rural Development Plan (RDP) and schemes such as Glastir[43] take account of improving water management; and maintaining and enhancing biodiversity where ever possible *(see section 4.1 Water for Nature, People and Business pp22-32)*. Integrated natural resource management proposals set out in the Environment Bill White Paper[44] will ensure that priorities and opportunities, and appropriate financial incentives, are better aligned at both a national and area level.

[43] Glastir is Welsh Government administered scheme that pays for the delivery of specific environmental goods and services

[44] Environment Bill White Paper - http://wales.gov.uk/consultations/environmentandcountryside/environment-bill-white-paper/?status=closed&lang=en

Improving regulatory approaches to address diffuse pollution

Through our initial engagement in developing this Strategy, many views were presented to us on the difficulties faced by Natural Resources Wales in taking regulatory action on diffuse pollution within the current regulatory regime. It is difficult for Natural Resources Wales to control diffuse pollution by issuing licences or permits. Whilst Natural Resources Wales has well established powers to address severe and chronic water pollution issues, its current regulatory tools are poorly suited for tackling diffuse pollution problems. Broader, yet easily enforced, regulatory standards would help provide clarity and operational flexibility for businesses.

We believe that general binding rules might be a useful tool ideally suited to dealing with diffuse pollution. This approach provides a proportionate means of addressing activities with the potential to harm the environment, some of which are currently regulated through permits or consents, and can work to improve environmental quality by providing an accepted best practice for an activity as a standard to work to. They are used in Scotland to address low risk activities which are commonly responsible for many diffuse water pollution problems. Whilst the environmental impact of this type of pollution may be individually small, the cumulative effect can be serious.

General binding rules can set out a simple set of rules for an activity which we believe will work effectively alongside proportionate penalties. The rules would be designed to outline good practice to protect the environment. For example, rather than requiring compliance with a numerical standard for oil in a discharge from an oil separator, which is both technically difficult to monitor and expensive, rules could require regular inspection and maintenance and the keeping of inspection and maintenance records. They are ideally suited for low risk activities which are commonly responsible for many diffuse water pollution problems. Similarly, activities that increase flood risk or soil runoff could ideally be addressed in a similar way.

We believe that general binding rules, used with variable financial penalties and legal notices could help Natural Resources Wales tackle diffuse pollution more effectively and would also facilitate the cost effective delivery of Water Framework Directive objectives in Wales.

We propose to use the Environment Bill to widen the scope of our powers relating to general binding rules where these can be shown to be an effective tool in addressing diffuse pollution and other environmental matters, such as:

- Activities liable to have an adverse impact on the water environment, including:
    - activities linked to diffuse pollution
    - abstraction of water from the water environment
- Activities liable to impact on flood-risk

- Activities liable to have an adverse impact on damage soil quality
- Activities liable to have an adverse impact on biodiversity

The recent consultation on the Environment Bill sought views on providing Welsh Ministers with the power to establish General Binding Rules. Those responding showed broad support for their use to regulate low-risk activity. Since not all of these areas relate to diffuse pollution, further consultation on rules in relation to land management will take place through a consultation on cross-compliance requirements.

We do not intend to list the specific rules to be established in primary legislation. This will be done at a later date through secondary legislation, once the need for a general binding rule is identified and the evidence for taking the proposal forward is assessed. We propose that Natural Resources Wales would be the enforcement body for general binding rules. The Environment Bill would introduce variable monetary penalties for a breach of these rules. These would be in line with Natural Resources Wales's existing powers to issue variable monetary penalties as detailed under the Regulatory Enforcement and Sanctions Act 2008.

Oil pollution has continued to affect the water environment in Wales, in many cases as a result of oil leaks from substandard storage tanks and pipework. We propose to consult on regulations for minimum standards for oil storage, as these have been effective in reducing diffuse pollution from oil storage and delivery elsewhere in the UK.

Maintaining controls on point source pollution

We recognise that discharges from sewage treatment works, sewerage systems, industrial activities and other point sources continue to have the potential to cause pollution. We expect operators of these sites and systems to plan investments and to maintain and operate them to ensure compliance with their environmental permits. We also expect Natural Resources Wales to maintain its high standards of permitting, monitoring and where necessary enforcing these activities.

Principal actions

Diffuse pollution has been identified in River Basin Management Plans as the principal issue for protecting and improving water quality in Wales. Working with Natural Resources Wales, we have identified a range of measures which will help to provide a more balanced approach to reducing diffuse pollution from both rural and developed areas. These include:

- We will ask Natural Resources Wales to review the effectiveness of their current provision of pollution prevention advice and enforcement procedures to ensure they are fit for purpose.
- We will encourage Natural Resources Wales and our own Agricultural Advisory Services to work with landowners to develop

a common understanding of diffuse pollution and how they can help to prevent it through improved land management.

- We will review how existing Government initiatives and funding can be used to help reduce pollution risk.
- We will further investigate how general binding rules could best be used in Wales, in particular to address diffuse pollution. Responses to the consultation questions below will inform the approach to be taken through the Environment Bill in relation to general binding rules.
- Regulations to reduce oil pollution, which we propose to bring forward for consultation in 2014.

Consultation Questions

6. Do you agree with our focus on diffuse pollution? If not, please explain why.

7. Are there any additional pollution problems which you believe we should identify? If so, what actions do you believe are required?

8. Do you agree with the scope of activity for General Binding Rules, as specified?

9. Do you agree that variable monetary penalties are the appropriate mechanism for Natural Resources Wales to enforce general binding rules?

4.3 Improving the way we plan and manage our water services

Key Issues

Water Company Planning

There is already a detailed planning process for the maintenance and development of our water resources and supply systems. Water companies have a statutory duty to produce Water Resource Management Plans on a five yearly basis. Each plan must model water supply and demand over a 25 year period for the company and must take account of climate change projections, population growth and new development as well as inform the water companies' future infrastructure and investment plans.

Water companies must also produce a drought plan on a 5 yearly cycle setting out the short-term operational steps they will take as a drought progresses. These plans inform the companies' asset management plans, which outline their proposed investment plans over a five yearly cycle, the Asset Management Planning Cycle. We believe this process should be aligned with the area-based approach to natural resource management.

There is, however, no requirement for sewerage undertakers to develop and maintain a strategic waste water and sewerage management plan. Much of the sewer network is old, and the average age of Dŵr Cymru Welsh Water's sewers is sixty years, although some date back to Victorian times. At current levels of investment, public sewers may not be replaced for up to 700 years[45]. This aging sewerage and drainage infrastructure needs to be surveyed, maintained and upgraded in order to continue to operate effectively and the impact on customer bills now and in the future taken into account.

We believe that long term planning for wastewater and sewerage management is needed as part of existing planning cycle, linked to local authority development plans, to ensure that when new developments are brought forward adequate waste water facilities are available and to achieve water quality objectives. This planning could follow the same process as the water resource and drought management plans. Given that the National Assembly for Wales does not have legislative competence for sewerage, we will work with water companies to introduce planning for waste water and sewerage management on a voluntary basis.

We also believe that there are opportunities to look at the timing and alignment of these various planning functions to reduce the burden on the companies of separate planning processes. This could ensure that their business plans have a more strategic approach.

[45] http://www.dwrcymru.com/library/PR14/YCYP_Eng.pdf

In seeking opportunities to amend the timing and alignment of these plans, we want to ensure that the planning process demonstrates and includes:

- Collaborative catchment management plans and investment;
- Embedding and aligning water resource management planning with the National natural resource policy and relevant area-based natural resource planning processes, as proposed in the Environment Bill White Paper, to ensure planning for water services both informs and takes account of our priorities for natural resources management;
- A presumption in favour of sustainable solutions, and evidence of their use in preference to expanding or renewing existing infrastructure capacity;
- A strategy for engaging with stakeholders, local authorities, customers and young people;
- Evidence that sustainable waste water and treatment solutions have been considered.

Leakage

Water leaking from water company pipes is wasteful of water and energy. However, companies are only obliged to deal with it where the benefits of reducing leakage outweigh the costs. This is a high priority issue for customers and can damage the industry's reputation. The industry has shown that it can become more effective in detecting and fixing leaks - leakage has fallen by 36% since 1994-95 and is expected to fall by a further 3% by 2015[46].

As new technology and management techniques develop, and as the value of water as an essential natural resource increases, we expect the level of leakage to continue to reduce. Water companies must fully consider managing leakage as part of an efficient way to maintain a secure supply of water to customers. We expect companies to develop a strategic approach to managing leakage which should inform their long term leakage forecasts that they produce as part of their water resources management plans. We expect companies to forecast a reduction in total leakage during the planning period. If this is not possible then a water company must clearly justify its position. As a minimum, we expect all companies to take action to ensure that total leakage forecasts do not rise at any point in the planning period and should not be causing a supply shortfall.

We recognise leakage issues can be brought about by severe weather conditions and expect water companies to plan for a more resilient network. We expect companies to continue to innovate and develop

[46] Making the most of every drop - A consultation on reforming the water abstraction management system - http://wales.gov.uk/consultations/environmentandcountryside/making-the-most-of-every-drop/?lang=en

expertise in preventing, identifying and repairing leakage more effectively. We expect Ofwat to continue to drive improvements in respect of leakage, building on improvements already achieved since targets were introduced.

Promoting the Efficient Use of Water

Using water efficiently, both as individuals as well as businesses, is an essential part of delivering long term sustainable management of our natural resources. Using water more efficiently also helps to reduce energy use, saves money and makes good business sense. Improvements in resource efficiency are essential for green growth - improving the resilience and productivity of businesses, communities and public service organisations, reducing the impacts of consumption and production, tackling poverty and reducing greenhouse gas emissions.

Our use of water as individuals has grown in recent years[47]. In order to encourage a reduction in domestic water use, we need to place a greater value on our water as a resource and to do more to use water efficiently. Because of the energy used in the treatment and delivery of drinking water, any reduction in water use will also help to reduce our carbon footprint.

Our work in developing this Strategy has highlighted the need for a better understanding of attitudes to water and the most effective ways of reducing per capita consumption. We will work with the water companies

[47] Environment Agency – Save Water - http://www.environment-agency.gov.uk/homeandleisure/beinggreen/117266.aspx

and other interested parties to investigate public attitudes to the use and value of water in Wales and will consider the value of company targets for per capita consumption.

Alongside this, we will work with the managers of the Welsh Government fuel poverty schemes, Nest and Arbed, to encourage the provision of water saving measures as part of their support packages. This will allow water and energy efficiency measures to be installed in houses at the same time, increasing the impact of these schemes and reducing the number of visits to a property.

As part of our efforts to ensure that our resources are managed sustainably, now and in the future, we will also assess and consult on a number of options for metering of all water supplies in Wales in a phased and proportionate programme. There is evidence[48] to support our belief that, with appropriate and innovative tariff structures, including Social Tariffs, focussed on customer needs, this could encourage consumers to give greater consideration of the value of water and their use of it. In addition, a system where all businesses and household customers pay for what they use is more transparent and fair.

We recognise that a metering programme for Wales would need to be delivered in conjunction with innovative charging structures, including social tariffs, in order to ensure that households with affordability issues are protected. The costs of installation, maintenance and reading of meters will need to be carefully considered in assessing options and the impact on customer bills. We would expect water companies to look at innovative technology to support implementation. We will work with the water companies, regulators and the Consumer Council for Water to develop options for metering all water supplies.

We will also work with the water companies and other interested parties to encourage and incentivise public engagement on water usage, to challenge perceptions and to promote the benefits of water efficiency. Our aim is to assist both domestic and business consumers in reducing their water use through changes in activities and replacement of old inefficient water devices such as showerheads, toilets, taps and appliances. The Welsh Government is currently in the process of putting in place a framework for provision of specialist advice services. Access to those services will be through Business Wales[49] (for business), Farming Connect[50] (for Farm and Forestry businesses), and a new resource advice service that will help households, communities and public sector organisations tackle resource efficiency issues.

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[48] Farming Connect - http://wales.gov.uk/topics/environmentcountryside/farmingconnect/?lang=en
[49] Business Wales - http://business.wales.gov.uk/
[50] Wessex Water Towards Sustainable Charging - http://www.wessexwater.co.uk/about/threecol.aspx?id=9026&linkidentifier=id&itemid=9026

Security of supply

Flooding, prolonged dry weather periods, and other extreme weather events experienced across the UK over the last few years have demonstrated the need for our water supply and waste water services and networks to be able to continue to function despite such events and for effective emergency planning. This is also true for our management of the water environment in general.

We will continue to work with water companies to develop plans that identify strategic assets, consider the impact of loss of service and plan alternative provisions. If needed, we have the power to issue Security and Emergency Measures Directions and associated Guidance which require the water companies to take appropriate steps to provide a secure system and we will assess the need for such Directions on an ongoing basis.

Reducing climate change impacts

In addition to ensuring water services are resilient to extreme weather conditions, the water sector has an important part to play in reducing greenhouse gas emissions. The Welsh Government Climate Change Strategy sets clear targets for reducing these emissions as well as a framework to help make sure that Wales adapts to the impacts of climate change. The water sector in the UK used 8,650 GWh[51] of electricity in 2008/9 and in 2006/7 was responsible for 5.5%[52] of greenhouse gas emissions. The companies can play an important role in both the emission reduction and adaptation agenda by reducing their use, generating their own energy and providing water and energy advice to households. We expect the companies to reflect emission reduction and climate change adaption in their Asset Management Plans.

Principal actions

- In order to reduce the burden of planning on water companies, we will review existing legislative, regulatory and planning processes associated with water services management.
- We will work with water companies to introduce a new requirement for waste water and sewerage management plans on a voluntary basis.
- We will investigate public attitudes to the use and value of water in Wales to help to inform how businesses and households can use water more efficiently.

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[51] Ofwat Playing our part – how can we cut greenhouse gas emissions in the water and sewerage sectors? - http://www.ofwat.gov.uk/sustainability/climatechange/prs_web_1007emissions

[52] Environment Agency Science Report SC0700010 - http://www.environment-agency.gov.uk/static/documents/Research/The_greenhouse_gas_implications_of_future_water_resources_options_-_SUMMARY.pdf

- We will consult on how we can reduce both domestic and business consumption and the role of water metering in this. We will assess the feasibility of a company per capita consumption targets to encourage efficiency
- We will establish a new resources advice service to help tackle resource efficiency issues.
- We will work with water companies and Ofwat to ensure that water services are resilient to extreme weather events and to produce Sector Resilience Plans. We will issue Security and Emergency Measures Directions and guidance as appropriate.

Consultation Questions

10. Do you agree with the principle behind aligning the Water Resource Management Plan and Drought Plan with the Asset Management Planning Cycle?

11. Do you agree that there is a need to improve our long term planning for waste water and sewerage management?

12. How can we ensure that Water Companies plans link with wider natural resource management plans? Do you have views about how this should be implemented?

13. Do you agree with the proposals to encourage more efficient water use? Are there are further actions that can be taken?

14. Do you agree which our approach to metering? What other factors do we need to consider?

15. Do you agree with this approach to managing leakage? Are there ways we can ensure leakage is sustainably reduced?

4.4 Water affordability and delivering excellent services to customers

Key Issues

Access to Affordable Water and Sewerage Services

Ensuring access to affordable water and sewerage services, both for people and businesses, is a key priority for the Welsh Government. In particular, we are concerned about the level of water charges and the impact of increases on those customers served by water companies who are least able to pay.

Water affordability is part of a broader issue of poverty where households struggle to afford the necessities of life. Households are deemed to be in water poverty if they pay more than 3%[53] of their income on their water bill; if they pay more than 5%, they are deemed to be in severe water poverty. Ofwat data for 2009-10[54], shows that around 30% people who received water and sewerage services from Dŵr Cymru Welsh Water spent more than 3% of their income on their water bill and around 14% spent more than 5% of their income on their water bill.

The *Tackling Poverty Action Plan*[55] sets out the Welsh Government's key objectives to prevent poverty in the long term, to help people out of poverty and mitigate the impact of poverty. The Action Plan recognises that to achieve better outcomes for everyone in Wales we need to be more joined up with our partners.

To support the objectives of the Tackling Poverty Action Plan, we have issued guidance[56] to water and sewerage companies and Ofwat in relation to social tariffs. The purpose of Social tariffs is to reduce charges for water consumers who have difficulties paying their bills. The Flood and Water Management Act 2010[57] gave the Welsh Government powers to issue guidance to the water and sewerage companies to include social

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[53] I Fitch, M. and Price, H. Water Poverty in the UK. Published by the Public Utilities Access Forum, July 2002, published to web by Chartered Institute of Environmental Health: www.cieh.org/uploadedFiles/Core/Policy/Publications_and_information_services/Policy_publications/Publications/waterpoverty.pdf

[54] Ofwat, Affordability and debt 2009 -10 – company tables, Ofwat website: http://www.ofwat.gov.uk/future/customers/metering/affordability/pap_tec201105afftables. These tables are based on estimates for geographical sewerage company areas not customers of particular companies. These will therefore include customers of water-only companies operating in the same geographical area.

[55] Welsh Government, Tackling Poverty Action Plan 2012-16 published June 2012, Welsh Government website: http://wales.gov.uk/topics/socialjustice/publications/tacklepovactionplan/?lang=en

[56] Welsh Government Social Tariff Guidance - http://wales.gov.uk/topics/environmentcountryside/epq/waterflooding/publications/social-tariff-guidance/?lang=en

[57] Flood and Water Management Act - http://www.legislation.gov.uk/ukpga/2010/29/contents

tariffs in their charging schemes. Social tariffs will enable these companies to reduce the costs for people who would otherwise have difficulty paying their bill in full. The Guidance also sets out the levels of cross subsidy that can be placed on the generality of customers to fund Social Tariffs. In tackling affordability we need to balance the cost of any measures against the resulting increase in water bills, so the generality of customers are not overly burdened.

The guidance sets the framework for water companies to develop a social tariff. The guidance includes the factors water companies need to consider when deciding if one group of customers should subsidise another. It also explains what Ofwat should consider when approving charging schemes. We would expect water companies to have social tariffs in place for the next charging period from 2015.

We will review the uptake and effectiveness of these social tariffs as part of a wider review of the support and assistance to tackle affordability issues. This review will be undertaken in the next Price Review period (2015 to 2020) to allow water companies time to put measures in place and so we can measure the success of these measures.

Tackling Debt

Alongside promoting measures to ensure water affordability, we need an effective approach to reducing the amount of bad debt each company has. Bad debt in the water industry is often the result of unpaid bills that are written off by a water company, either because the debt cannot be collected (having exhausted all reasonable efforts) or the cost of recovery exceeds the debt. Over the last decade, water companies bad debt has increased because of households not paying their water and sewage bills[58]. In Wales this lost revenue can add as much as £20[59] per year to a household bill.

Debt problems can be linked to customers' ability to pay. Support for struggling households should help reduce levels of bad debt. The Welsh Government expects water companies to know their customers and to offer innovative solutions, such as appropriately targeted tariffs and payment plans, to minimise the numbers falling into debt and to maximise the numbers addressing their debts.

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[58] Welsh Government,Consultation on tackling 'bad debt' within the water industry in Wales, Appendix 2 - Consultation Stage Regulatory Impact Assessment February 2013, published June 2013, Welsh Government website: http://wales.gov.uk/consultations/environmentandcountryside/tackling-bad-debt-in-the-water-industry/?lang=en, accessed

[59] Dŵr Cymru Welsh Water. Of the water companies operating wholly or mainly in Wales, Dŵr Cymru Welsh Water estimate that the equivalent of £20 of the average customer bill goes towards covering the costs of recovering outstanding revenue. However, there could be some variation in this figure between companies, since the methodologies used to calculate this amount are sensitive to companies' individual write-off policies. The £20 figure is therefore considered to be an upper estimate and should be treated with some caution

Alongside this, we want to ensure that the water companies have the appropriate tools at their disposal to tackle bad debt. We have recently consulted on draft Regulations[60] which would require landlords to provide details of their own name and address, along with a tenant's name, date of birth and the date they started occupancy, to the relevant water company. This would make it easier for the water companies to collect payment for bills and reduce costs currently borne by other customers, leading to reduced water bills for all.

In order to better understand water debt in Wales, we will undertake further research as part of our wider review of affordability issues.

Excellent services to customers

Ensuring a strong customer focus should be at the heart of the delivery of water and sewerage services in Wales and this requires both a sound understanding of existing and future customer needs as well as a strong voice for consumer representation. We want to see water companies build on the Customer Challenge Group work undertaken during the 2014 Periodic Review process, ensuring that such customer engagement and research becomes a key part of their operations. We expect the water industry and regulators to take account of their own and other parties' consumer research and to respond appropriately to research finding. We also expect companies operating in Wales to be among the best on all performance measures, including those relating to customer services[61].

As well as ensuring high quality services to domestic customers, we want to ensure that businesses in Wales benefit from a responsive and flexible water industry. We expect water companies in Wales to engage effectively with local authorities, housing associations and developers when proposals for development are brought forward. Similarly we expect water companies to work effectively with businesses when new or revised requirements for supply are identified. We also expect regulators to support these processes appropriately.

In particular, we expect our water companies to be more proactive and supportive of the needs of businesses in Wales, offering excellent services to their customers. We expect Ofwat to retain an integral role in driving forward efficiencies and encouraging innovation from water companies in Wales with regards to their business customers. This role should include ensuring that we are able to demonstrate business services compare favourably to those being provided by water companies in England given the back drop of the introduction of retail competition in England. We are currently undertaking research into the needs of

[60] Welsh Government,Consultation on tackling 'bad debt' within the water industry in Wales, published June 2013 Welsh Government website: http://wales.gov.uk/consultations/environmentandcountryside/tackling-bad-debt-in-the-water-industry/?lang=en,

[61] OFWAT provides information on water company performance http://www.ofwat.gov.uk/regulating/reporting/prs_web2012-13performance

business customer requirements in Wales (*section 4.7 Supporting Delivery pp59-65*) and will continue to review and assess options to ensure we support the needs of businesses in Wales.

We support and value the work that the Consumer Council for Water undertakes in representing the interests of water customers and recognise the particular challenges that a geographic monopoly industry, with complex price setting processes, provides for effective consumer representation. This representation is particularly important for providing customer representation during the Ofwat's price-setting Periodic Reviews. In addition, over the next few years we will see a number of reviews and changes in the regulation and strategic planning of the water sector. The Consumer Council for Water has a key role in informing these changes and ensuring effective representation of the interests of household and businesses customers in Wales.

The Gray Review team strongly recommended to the UK and Welsh Government that effective consumer representation is required in the water sector for the foreseeable future and the retention of the functions currently undertaken by the Consumer Council for Water. We share this view and value their role in representing consumers in Wales.

We will work jointly with the UK Government to review the role and functions of the Consumer Council for Water after the 2014 price-setting Periodic Review to ensure that consumers are receiving effective representation. This will help inform our determination on the most appropriate mechanism for consumer representation in Wales. Our decisions will be based on firm evidence and on the long term benefits for customers in Wales – it is essential that we consider the needs of future customers as well as existing customers. And whilst a focus on

customers is important, we believe that our relationship with water should not be limited to the bills we pay to our water providers. Water is one of our most critical natural resources and assets and as we noted in *section 4.1 Water for Nature, Business and People (pp22-32)*, we will seek to promote a greater civic interest and involvement in the planning and management of our water resources.

Principal actions

- We are undertaking a review of business customer requirements in Wales and will work with businesses, regulators and the water industry to seek opportunities to improve the services businesses receive and learn from experiences elsewhere. This research will help inform our future policy direction.
- Subject to the analysis of responses we will put forward regulations in 2014 which will help companies to reduce the level of debt owed to them. We will undertake further research in to affordability issues, but expect water companies to be innovative in supporting their customers to manage debt.
- In order to address water poverty, we will undertake a review into the issue of water poverty and what is being done to reduce the number of households who struggle to pay their bills.

Consultation Questions

16. How can we ensure best practice is shared across the water industry, to ensure that innovative solutions to address water poverty issues are shared with others?

17. Have we identified the key issues and actions in relation to water affordability issues?

18. Are there any other approaches we could adopt to support the needs of both domestic and business customers?

4.5 Protecting and Improving Drinking Water Quality

Key Issues

Maintaining and improving drinking water quality

We will act to maintain the current high standard of our public drinking water quality and to ensure compliance with the Drinking Water Directive. The supply of potable water to our homes, businesses and industry is a vital service, supporting economic activity and protecting public health and the environment. We expect water companies to act on the findings in the annual reports[62] from the Drinking Water Inspectorate to maintain and improve drinking water quality.

The Drinking Water Inspectorate's reports have specifically highlighted the need for improvements in private water supplies[63]. The rural nature of much of Wales means that many people rely on their own water supplies. There are more than 17,700 private water supplies in Wales serving in excess of 166,000 people. In addition there are more than 30,000 people living in over 13,000 single properties served by private supply that is exempt from monitoring. New legislation on private water supplies was introduced in 2010[64] with a five year implementation period which set out the standards that all private supplies must comply with. This replaced earlier legislation, confirming the duties of local authorities to monitor private supplies, maintain records and to send these to the Drinking Water Inspectorate and Welsh Ministers. By 2015 we expect to have adequate data on the quality of private drinking water to enable us to undertake a review of the effectiveness of these regulations. In the longer term, we will work with the Water Health Partnership[65] in Wales and the Drinking Water Inspectorate to develop guidance and an engagement strategy to help owners of private supplies to improve their understanding of public health and water quality issues in Wales and their statutory responsibilities.

Appropriate and well-managed water supply systems

An appropriate and well-managed water supply infrastructure is critical to maintaining and improving water quality and reducing leakage. But it is also essential that the pipes and fittings which connect to this infrastructure are fit for purpose.

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[62] Drinking Water Inspectorate Annual Report - http://dwi.defra.gov.uk/about/annual-report/

[63] Drinking Water Inspectorate Private water supply report 2012 - http://dwi.defra.gov.uk/about/annual-report/2012/

[64] The Private Water Supplies (Wales) Regulations 2010 - http://wales.gov.uk/topics/environmentcountryside/epq/waterflooding/privatesupplies/?lang=en

[65] Water Health Partnership for Wales - http://www.dwrcymru.co.uk/en/Company-Information/Business-Operations/Water-Health-Partnership-for-Wales.aspx

Water supply pipes within the boundary of a property can impact on water quality at the tap and may be subject to uncontrolled leakage[66]. These supply pipes are privately owned and connect buildings to the public water supply infrastructure, which is the responsibility of the water supply companies. Many are old and subject to corrosion which can cause leaks and affect water quality. The owners are often not aware of their responsibilities for the upkeep of these pipes and there is therefore no planned approach to repair and replacement.

We are working with the UK Government to investigate the costs and benefits of transferring these water supply pipes to water supply companies[67]. Such a transfer could facilitate the management and repair of these pipes in a more strategic and economic way and, coupled with a planned renewal programme, result in a more sustainable approach to network management which would help maintain drinking water quality. A transfer could also lead to a reduction in leakage by speeding up repair times as a result of clarity of ownership and water company service policy.

In order to protect the quality of drinking water in buildings and reduce health risks, it is vital that suitable materials and fittings are used and that they are properly installed. Poor installation practices or use of non-approved water fittings can result in contamination of water. This could involve, for example, lead being introduced as a result of the use of lead-based solders which are not approved for use in drinking water systems or a cross connection causing a link to non-potable water. The Water Fittings Regulations[68] aim to address these risks and protect the quality of drinking water in buildings. The Water Regulations Advisory Service (WRAS) is funded by the water companies to provide advice on the use and installation of water fittings. In order to raise standards of plumbing installation practices, a number of approved contractor schemes are under development, such as the WaterSafe Installers Scheme. We will work with water companies, WRAS and installers to promote such schemes.

Water pipes and fittings containing lead have been used for plumbing purposes until relatively recently. The health impacts of lead in drinking water, in particular for children, have been the subject of international research[69]. Currently, these risks are managed through the dosing of drinking water with phosphate, which prevents lead dissolving into the water. Although this is the most economic means of controlling the risk

[66] Environment Agency Water Resources for Wales - http://www.environment-agency.gov.uk/research/library/publications/40731.aspx
[67] Defra Consultation on the future management of private water supply pipes https://www.gov.uk/government/consultations/future-management-of-private-water-supply-pipes
[68] The Water Supply (Water Fitting) Regulations (1999) - http://www.legislation.gov.uk/uksi/1999/1148/contents/made
[69] World Health Organisation – Water Related Diseases - http://www.who.int/water_sanitation_health/diseases/lead/en/

from lead[70], it does not remove the long term risk from lead pipes and fittings. In addition, phosphate resources are limited[71], and its use in drinking water has implications for sewage treatment and water pollution. We will work with the Drinking Water Inspectorate, water companies and others to investigate alternatives to the use of phosphate for the control of the risks from lead used in plumbing.

Principal actions

- We will work with the Drinking Water Inspectorate to keep the relevant legislation under review. In 2015, we will review the effectiveness of the Private Water Supplies (Wales) Regulations 2010.
- We will promote approved contractor's schemes, such as the WaterSafe Installers Scheme to improve the standard of plumbing installations in Wales.
- We will investigate the costs and benefits of transferring ownership of the portion of water supply pipes that are currently privately owned to the water supply companies.

Consultation Questions

19. Are there any additional drinking water quality matters that we should consider? Do you agree with our proposal to investigate the transfer of water supply pipes to the water companies?

20. Should we develop and consult on a long term strategy to remove the health risks associated with the historic use of lead in plumbing?

[70] IWA - Optimisation of Corrosion Control for Lead in Drinking Water Using Computational Modelling Techniques - http://www.iwapublishing.co.uk/template.cfm?name=isbn9781780404783
[71] IWA - Phosphorus Removal Potential Using Biogenic Iron Oxides - http://www.iwapublishing.co.uk/template.cfm?name=isbn9781843396154

4.6 A New Approach for Drainage

We want an appropriate drainage infrastructure for both waste water and surface water, which is managed in an integrated way. This section has a focus on built infrastructure, with land drainage matters mostly covered in *section 4.1 Water for Nature, People and Business (pp22-32).* However, there are organisational issues and links with the sustainable drainage approach which are outlined below.

Key Issues

A sustainable approach to drainage

In both rural and developed areas, surface water flooding and diffuse pollution are matters of growing concern. The predicted increase in intense rainfall events will present even greater challenges to our drainage systems and the way that we manage land. We need a drainage approach that can cope with these challenges and help address the risk of surface water flooding and diffuse pollution. The sustainable drainage systems (SuDS) approach to surface water management aims to deal with rainwater on the surface and close to where it falls. This approach can be applied in both rural and developed areas, slowing down the flow of water, reducing flood risk and protecting water quality.

The SuDS approach uses techniques such as infiltration and retention that mimic runoff from a site in its natural state. SuDS schemes typically use combinations of installations such as permeable paving, soakaways, green roofs, swales and ponds.

The SuDS approach can be used effectively in both rural and urban areas and supports new development without adding to the risk of flooding or pollution. In rural areas good land management practices can do much to reduce downstream flood risk and protect water quality (see *section 4.1 Water for Nature, People and Business pp22-32)* but SuDS techniques can also provide ways of managing surface water from farm yards and buildings.

In developed areas, reduced runoff to sewers provides additional capacity without expensive engineering work, whilst more natural systems such as wetlands and swales improve biodiversity and amenity. In addition, the SuDS approach can provide a wide range of additional benefits such as improving the visual amenity of developments, providing open space, and contributing to ecosystem resilience through habitat networks.

Despite these benefits, we estimate that the proportion of new developments and redevelopments drained by SuDS of some sort is low and uptake has been slow. The Flood and Water Management Act 2010 (FWMA) [72] requires new developments to include sustainable drainage.

[72] Flood and Water Management Act - http://www.legislation.gov.uk/ukpga/2010/29/contents

We propose to consult on national standards for SuDS and the implementation of these SuDS provisions in 2014.

The SuDS approach can also be used in tackling surface water drainage problems in existing developed areas. Such retrofitting, for example the Rainscape scheme in Llanelli[73], can improve the environment for local people, provide more green spaces and recreational areas and reduce flood risk. It can relieve pressure on existing drainage systems, resulting in savings in maintenance or upgrading. It also provides an opportunity to engage with the local community on their role in drainage and water management. The SuDS approach is central to future surface water management and supporting innovative surface water drainage in Wales.

To support this, we will work with sewerage undertakers and highways authorities to facilitate the use of natural systems in infrastructure developments and to reinstate or create aquatic features, such as wetlands and natural river channels, where there are benefits for wildlife, communities and customers.

For new developments, an approach which integrates water cycle management into development planning and design has been pioneered in Australia[74]. Known as Water Sensitive Urban Design (WSUD) it uses SuDS principles, and builds on ecosystems services principles to reduce water use, minimise flood risk and improve water quality. This integrated approach gives wide benefits, including reduced energy use, more diverse habitats, urban regeneration and an improved relationship

[73] http://www.dwrcymru.com/en/My-Wastewater/RainScape.aspx
[74] http://www.melbournewater.com.au/wsud

between people and their water. We will work with colleagues within Welsh Government and stakeholders such as Natural Resources Wales, Welsh Local Government Association, professional bodies (e.g. Royal Town Planning Institute, Royal Institute of Chartered Surveyors, Institute of Civil Engineers, and the Landscape Institute), developers and academic institutions to identify how the WSUD approach could be used in Wales.

Responsibility for drainage and sewerage infrastructure

Due to the way that drainage systems have developed over time, a range of individuals and organisations have ownership and responsibility for them. Drainage from our developed areas is collected by a network of pipes which carry foul drainage, trade effluent and rainwater from around properties and roads. Public sewers are owned and maintained by sewerage undertakers, private drains connect individual properties to the sewers and highways authorities (usually the local authority) are usually responsible for road drainage. During our pre-consultation workshops, concerns were raised over the complexity of the arrangements for surface water drainage and cases where such assets appeared to have no owner – in effect these are orphaned assets.

In rural areas, drainage is often the responsibility of Natural Resources Wales or a small number of Internal Drainage Boards (IDBs). Following a review of the IDBs in 2013, the Welsh Government has announced that their functions will be taken on by Natural Resources Wales in April 2015[75].

Highways drainage is the responsibility of highways authorities, in most cases local authorities. The relationship between highways drains and the public sewerage network is complex, with some highways drains carrying surface water from public systems and some highways drainage discharging into public sewers. Discharges of highway drainage into the public sewer network can have significant impacts on the capacity of the sewerage network and additional impacts on downstream water quality. Research for Dŵr Cymru Welsh Water's Surface Water Management Strategy[76] estimates that around 24% of surface water flows in the sewer network is highway drainage.

Different legislation governs the respective roles of highways authorities and sewerage undertakers. Working with all interested parties, we will review legislation and practices relating to drainage, focussing on surface water, highways drainage and orphaned assets. We will want to see if the current arrangements are fit for purpose or whether we can improve arrangements in the context of this Strategy. Our aim is to improve both the protection of water quality and management of flood risk by reducing

[75] Welsh Government Written Statement - Future arrangements for Internal Drainage Boards in Wales - http://wales.gov.uk/about/cabinet/cabinetstatements/2013/idb/?lang=en
[76] Dŵr Cymru Welsh Water's Surface Water Management Strategy - http://www.dwrcymru.com/en/Environment/Surface-Water-Management-Strategy.aspx

the amount of surface water entering the sewerage system using the sustainable drainage (SuDS) approach.

We will also, as part of this drainage review, assess the implementation of the new process for the adoption of public sewers introduced in October 2012 and the related Ministerial standards and consider whether there is a need for statutory guidance under Section 106B of the Water Industry Act 1991[77].

Box 4 – Recent Changes in drainage law

Following a number of consultations over a period of more than ten years, the Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011 made sewerage undertakers responsible for the maintenance of private sewers and lateral drains that connect to the public sewerage network. This was the largest change in sewerage law since the privatisation of the water utilities in 1989, relieving private individuals of an unfair burden of responsibility and improving the overall management of the sewerage network.

Although private sewers were transferred overnight to the sewerage undertakers, the situation relating to pumping stations is more complex. The regulations require the adoption of private pumping stations by 1 October 2016. There are some exceptions, for example those serving a single house or an industrial site in single ownership, which the regulations do not require to be adopted and these will remain the responsibility of their private owners. It is essential that their owners continue to maintain and operate these responsibly.

In order to prevent the creation of a new stock of private sewers, a requirement for all new sewers to be built to minimum standards and then adopted by the sewerage undertakers was introduced in the Dŵr Cymru Welsh Water area on 1 October 2012. We will consider the operation of this requirement as part of our proposed review of drainage provisions.

Public sewers

In developing this Strategy, concerns have been raised regarding the disposal of domestic and commercial solid waste to the sewerage network as a result of a growth in the installation of under the sink macerators. The use of these macerators adds to the loading of sewage treatment works and can contribute to blockages in sewers. We will work with waste policy colleagues, sewerage undertakers and other interested parties to ensure a coherent approach to this issue. Our aim is to reduce the amount of solid waste, such as food and paper, that is disposed of to the sewerage network and to maximise the benefit from such waste

[77] Adoption arrangements for sewers and lateral drains - http://wales.gov.uk/topics/environmentcountryside/epq/waterflooding/sewers/adoptionarrangements/?lang=en

through composting and anaerobic digestion. The planned Environment Bill offers an opportunity to provide appropriate legislative change if required.

Private Sewerage

Although the majority of properties in Wales are served by public drainage systems, approximately 100,000 properties in Wales, mostly in rural areas, are not connected to public sewers.

Private sewerage systems generally serve single or small numbers of properties. There are three types of system in common use - small sewage treatment plants, septic tanks, and cesspools (or cess pits) which provide adequate sewerage services if properly installed and well maintained, although problems can occur if there are too many such systems in an area. Small sewage treatment plants and septic tanks must be registered with Natural Resources Wales. When owners take their responsibilities for maintenance seriously these are sufficient where a public sewer is not economic. Alternative, low energy systems such as compost toilets or reed bed systems are also suitable for small scale developments. We aim to support owners by working with Natural Resource Wales and other partners to provide guidance on septic tank maintenance. We will also engage with local authorities who have a duty to ensure that owners of private sewerage systems maintain them to prevent a threat to public or environmental health.

There are, however, significant environmental and sustainability issues with cesspools due to the costs of emptying them and the carbon emissions from frequent tanker movements. Owners can be reluctant to have them emptied because of the costs, resulting in the need for local authorities to take enforcement action because they are overflowing or leaking. Building Regulations already treat cesspools as a last resort, and in Scotland they are no longer allowed. Cesspools may be appropriate for temporary use, for example at a road construction site office, but we do not believe that are a suitable long-term means of dealing with sewage. We will investigate limits on the use of cesspools for anything other than temporary sites.

Property owners in rural areas can request the provision of drainage under Section 101A of the Water Industry Act 1991, and the sewerage undertaker must assess the request against specific criteria[78]. If the undertaker turns down the request, Natural Resource Wales is responsible for determining any disputes. The operation of Section 101A can be complex and lengthy and stakeholder feedback has indicated that improvements to the statutory guidance could help to reduce the number of disputes and speed up the Section 101A process. We will update and consult on a revised document which will provide guidance for sewerage undertakers and act as a source of information for other stakeholders and

[78] Welsh Government Section 101A Guidance - http://wales.gov.uk/consultations/environmentandcountryside/connecting-properties-to-public-sewers/?lang=en

applicants. We will also consider how Section 101A could be amended to improve its operation.

Principal actions

- We will consult on the implementation of Schedule 3 of the Flood and Water Management Act 2010[79] which requires new developments to include sustainable drainage systems (SuDS). We will also seek ways to encourage the use of the SuDS approach to deal with capacity problems in existing developed areas.
- We will undertake a review of current drainage ownership and related legislation, with a particular emphasis on surface water and orphan assets. This review will include the operation of the mandatory sewerage adoption process and the effectiveness of the 2012 Ministers' Build Standards.
- We will consider how best to reduce the disposal of solid waste, such as food and paper, to the public sewerage network, including potential legislative change through the Environment Bill.
- We will update and consult on revised guidance for sewerage schemes for rural communities under Section 101A of the Water Industry Act 1991 and consider legislating to simplify the process.

Consultation Questions

21. Do you agree with our priorities for drainage matters?

22. This section has focused on built infrastructure, which mostly serves developed areas. Is there anything more we should consider for rural areas?

23. Are there any other significant issues which you believe we should have included?

[79] Flood and Water Management Act - http://www.legislation.gov.uk/ukpga/2010/29/contents

4.7 Supporting Delivery

Key Issues

Working collaboratively

The Welsh Government already engages and works collaboratively to deliver our policy objectives in relation to water. As well as direct engagement with partners through our existing Water Framework Directive stakeholder forum and the Water Industry Forum (see below), our agencies, such as Natural Resources Wales, engage directly with communities on water management issues. We have stated in *Section 4.1 Water for Nature, Business and People (pp22-32)* how we expect Natural Resources Wales to build on this emphasis on local level engagement and involve communities in planning and decision-making. This is not necessarily about doing something new, but, recognising that River Basin liaison panels cover large areas, seeking a way to draw on local knowledge and experience to advise on integrating water resource management.

Box 5 – Water Industry Forum

The Water Industry Forum for Wales brings together key organisations to plan the strategic direction for water and sewerage services in Wales. The forum was established following the success of the Wales PR09 Forum, which brought stakeholders together to work on the water company price setting process in 2009.

Membership:

- Albion Water Limited
- Consumer Council for Water
- Dee Valley Water
- Drinking Water Inspectorate
- Dŵr Cymru Welsh Water
- Natural Resources Wales
- Water Services Regulation Authority (Ofwat)
- Welsh Government
- Welsh Local Government Association

The Water Industry Forum has been a useful forum to drive collaboration in this sector but its focus has been on the water industry in Wales. Recognising the challenges set out in this Strategy as well as the importance of keeping engagement mechanisms simple and clear, we now intend to build on the work of the Forum. Where and when appropriate, we will broaden its membership and remit to ensure a focus on some of the wider challenges posed by water management in Wales, for example to include relevant land management or academic representation. The remit of the Forum will be reviewed to ensure a focus on delivering the objectives of the Strategy, and in particular ensuring a

link between the work of the Forum and the wider Natural Resources Reference Group. We will also work with and support greater links between the higher education sector in Wales, Government, regulators and water companies to assist with the delivery of the Strategy.

A Regulatory framework aligned with Welsh needs

The role of the regulators in encouraging and incentivising water companies to deliver for their customers and the environment is central to our vision for water in Wales. We expect our regulators to work proactively and constructively with each other and with other key partners to ensure effective decision making, to reduce regulatory burdens where appropriate and help implement the aims of this Strategy.

We have recently established Natural Resources Wales to ensure that environmental regulation in Wales is focused on delivering a more integrated approach to the management of our natural resources. We set the detailed remit and priorities of Natural Resources Wales on an annual basis and we have developed shared outcomes with the new body to ensure full alignment with our policies.

Alongside this, we have published Social and Economic Guidance for Ofwat which sets out our policy in this area and which Ofwat will take into consideration in determining the business plans of companies wholly or mainly in Wales. We aim to replace the Social and Environmental Guidance with a statutory Strategic Policy Statement (SPS) for Ofwat. The SPS will set the Welsh Government's strategic framework and policy priorities within which Ofwat will operate. It will detail how we expect Ofwat to take account of the impact of differences in water policies set by the Welsh and UK Governments and to collect appropriate evidence to inform effective regulatory and wider policy decisions. In line with the *Principles of Economic Regulation*[80] this guidance will seek to provide a long-term view of the Welsh Government's overarching priorities, providing stability for both Ofwat and industry and will be updated no more frequently than once an Assembly term.

We want to see more innovation in the water sector to enable more efficient and cost effective solutions. We recognise the critical importance of ensuring that public health is protected and that environmental obligations are met, but we want to ensure Regulators provide incentives and encouragement for innovation within the existing structure of a water sector which is often seen as risk-averse. We expect Ofwat's future framework of incentives to provide the right balance between rewards and penalties in the context of an outcome-based approach which recognises compliance with statutory obligations, Welsh Government priorities and circumstances in Wales.

[80] BIS- Principles of Economic Regulation - http://www.bis.gov.uk/policies/better-regulation/improving-regulatory-delivery/principles-for-economic-regulation

We believe that changes to the regulatory environment should benefit all customers in Wales, whilst taking account our objective of a more integrated approach to the management of our water resources.

To inform our assessment of future regulatory approaches to water in Wales, we have commissioned independent research which will be published later in 2014 and will inform our final Strategy. The aims of this research are to assess the current water industry regulatory and legislative framework in Wales in order to understand whether it is fit for purpose. It will also explore alternative options to test against the existing framework of regulation that will ensure customers in Wales receive the best service within the context of our wider policy aims. We expect the research to provide us with a picture of the likely impacts of different regulatory scenarios on catchment protection, sustainable management of natural resources through delivery of multiple ecosystem benefits and resilience of the water supply network.

Constitutional Reform

One of the main constraints on our ability to effectively deliver on the objectives of this Strategy is the outdated constitutional settlement for water and sewerage matters in Wales. The majority of key water and sewerage legislation is based around water company boundaries rather than political boundaries and predates the establishment of the National Assembly. Accordingly, Welsh Ministers have responsibility for water companies operating wholly or mainly in Wales (Dŵr Cymru Welsh Water, Albion Water and Dee Valley Water) and the UK Government has responsibility for water companies operating wholly or mainly in England (Severn Trent Water and Scottish and Southern Water). All of these water companies, apart from Albion Water and Scottish and Southern Water, have operational areas which cross the border between Wales and England.

Alongside this issue of regulatory boundaries, there are also significant gaps in the powers of the National Assembly both in relation to aspects of water policy, particularly economic regulation, as well as in relation to sewerage.

Our objectives are the alignment of the regulatory boundaries for water and sewerage with the geographical border between Wales and England, the conferral of full legislative competence on the National Assembly in relation to all matters relating to water and sewerage and the removal of the unilateral power of the UK Government to intervene in respect of water resources in Wales. We want to move to a new settlement for both the existing functions conferred upon Welsh and UK Government Ministers and the legislative competence conferred upon the National Assembly for Wales. This approach is supported by the findings of the Silk Commission on the Powers of the National Assembly[81].

[81]Silk Commission- http://commissionondevolutioninwales.independent.gov.uk/

We believe that aligning the regulation of water and sewerage services with the geographical border will better enable us to integrate water within our approach to natural resource management, ensuring that we make the most of the opportunities that Wales' natural resources provide. Adopting the geographical border as the regulatory boundary will also provide clarity of accountability for consumers, water suppliers, policy-makers and legislators. A move towards a geographical split would ensure that the National Assembly for Wales had legislative competence in relation to all matters relating to water, including licensing and the appointment and regulation of water undertakers. Using the geographical boundary with England for water services regulation would be in line with the legislative competence held for other Acts of the National Assembly for Wales.

To enable us to better understand the practical issues relating to moving from the current settlement, the Welsh Government will, working closely with regulators and water companies, undertake a detailed assessment of the issues that will need to be addressed and develop a route map for moving towards a new settlement.

Innovative and proactive water companies

We expect our water companies to be both innovative and proactive in working with others, including regulators, in seeking to improve services and assisting with the delivery of the objectives of this Strategy.

Good research and evidence is required to underpin a successful and innovative water sector. With this knowledge, the sector can develop better ways of tackling matters of importance in Wales, now and in the future. Effective monitoring programmes are essential, both to ensure that environmental measures are met as well as to ensure properly targeted investment for future maintenance and improvements. This will help to ensure that issues are tackled earlier, when it is more cost-effective to do so, instead of them going unnoticed until a severe problem occurs, resulting in remedial action at a higher cost.

We expect the water sector to identify opportunities for research and development, working with institutions in Wales and further afield where appropriate. Companies should seek to share best practice and learn from others in developing appropriate science and technology and implementing innovations. They should, in particular, be exploring innovative approaches which will reduce their operating costs, increase resilience to climate change, reduce green-house gas emissions and ensure the adoption of more resource efficient practices in their operations

As well as ensuring excellent services to their customers, water companies in Wales should be proactively encouraging and supporting their customers, both business and domestic, to become more water efficient. We also expect them to play an important role in developing measures to support their most vulnerable customers, within the overall

policy framework set out by the Welsh Government, as set out in *Section 4.4 Water Affordability and Delivering Excellent Services to Customers (pp45-49).*

Supporting Innovation

Supporting innovation, particularly within the water industry, is one of our key priorities. We have already set out our expectation of our regulators, particularly Ofwat, in terms of driving innovation within this sector. We have also set out our clear expectation that innovation should be at the heart of the approach adopted by the water sector in Wales and in particular our water companies.

We will support innovation in the water sector through our Science Strategy, Science for Wales[82] and our Innovation Strategy, Innovation Wales[83]. These set out our vision for science and innovation, the key initiatives we will take and how we measure success.

These strategies were developed after extensive consultation with internal and external stakeholders. The Science Strategy offers a constructive way ahead both for what we can do to help science thrive and what we expect our partners, such a those in higher education and business, to address to make this Strategy a reality. The Strategy introduces a new initiative 'Sêr Cymru' (Stars Wales). It comprises funding of up to £50 million over five years for new academic 'stars' and National Research Networks, including in relation to low carbon, energy and the environment.

The Innovation Strategy adopts a new approach to innovation across business, government and society as a whole. This involves developing more flexible ways of nurturing business innovation, more imaginative public procurement and co-operation across levels of government.

Across Sector Business Support

Green growth is a crucial aspect of the Welsh Government drive towards economic growth and job creation that is both environmentally sustainable and socially inclusive. The green economy is an important element of green growth and describes a sub-set of the Welsh economy.

Wales is already home to an established and growing green economy[84], including a small but thriving cluster of companies in the water sector and its supply chain. The Welsh Government is dedicated to supporting these

[82] Welsh Government – Science Strategy for Wales - http://wales.gov.uk/topics/businessandeconomy/csaw/?lang=en
[83] Welsh Government – Innovation Wales - http://wales.gov.uk/topics/businessandeconomy/innovation/innovation-strategy-wales/?lang=en
[84] Sales in the green economy in Wales contributed £5.5 billion to the Welsh economy in 2011/12, supporting over 41,000 jobs. During the recession between 2009/10 and 2011/12, jobs grew by around 2.4% and sales by around 9.3%.

companies in meeting the challenges and taking advantage of the opportunities which this Strategy presents.

Energy, Environmental Goods and Services, along with Construction, are key priority sectors for the Welsh Government and we will continue to provide tailored support for businesses in these and related sectors to enable us to build on our existing expertise. Our dedicated team of Business Development Managers will work directly with companies to advise and assist in a range of areas from business expansion to supply chain development, developing local networks and exploring international markets[85]. We will continue to work across the Welsh Government to support businesses in Wales to make the most of our water and respond to current and future opportunities that water offers.

The right skills to implement the Strategy

We will seek to build on the skills and experience Wales has in the water sector to ensure that we maintain and develop a high level of expertise to support businesses as well as regulatory requirements.

Science, technology, engineering and mathematics – known as the STEM subjects – are important to everyone but have a key role to play within the water sector. We have set up the National Science Academy (NSA) to help raise interest in these subjects amongst children and adults. We want to increase the number of people who study STEM subjects, and then choose STEM-related careers at all levels. This project is part of our science Strategy, Science for Wales.

Alongside this, we will work with academic organisations and the skills sector to ensure that we have specific education and training opportunities to meet our future water management needs and to encourage and enhance business and market opportunities within Wales.

An Evidence and Evaluation Framework

Our approach to implementing this Strategy will be driven by evidence. Our policy development process is based on research and rigorous analysis of evidence. We expect water companies and regulators to put the same emphasis on undertaking relevant research and evidence gathering to inform their work and business planning. We see this as a key element of delivering the right results for Wales.

We will develop an evidence and evaluation framework to sit alongside the Strategy. This will be developed in conjunction with regulators, the water industry, academia and other interested parties who also have a key role in commissioning or undertaking research and evidence. It will be informed by the key priorities and strategic outcomes set out in Chapter 2 (pp 6-9).

[85] www.business.wales.gov.uk

In particular, the framework will identify any evidence or data gaps and consider how these might be addressed, taking account of the practicality, cost and utility of deriving additional information. This will help support the development of the Strategy and inform its review and evaluation.

The framework will also consider the indicators to measure overall progress with the Strategy. There are already a significant range of indicators in place but we will assess as part of developing our evidence and evaluation framework whether we need to refine these indicators or develop new indicators.

Principal actions

- We will review the remit, membership and focus of the Water Industry Forum to ensure a focus on the wider water management challenges in Wales and the delivery of the Strategy.
- We will implement new legislation through the Water Bill to enable Welsh Ministers to publish a statement setting out strategic priorities and objectives for Ofwat in relation to appointment areas wholly or mainly in Wales.
- We will review future regulatory approaches for Wales in light of the recently commissioned research on water regulation.
- We will undertake a review of the practical implications of aligning the regulatory boundaries for water and sewerage with the geographical border between Wales and England.
- We will develop an Evidence and Evaluation framework to help support the delivery of the Strategy.

Consultation Questions

24. Do you agree with our approach to ensuring that regulation in focussed on the Welsh Government's priorities? Do you have any other views or suggestions regarding the regulatory framework and whether it is fit for purpose?

25. Are there other actions that we should undertake to support innovation across the water sector as a whole?

26. What more could the Welsh Government do to effectively support businesses in the water sector to grow and prosper?

27. Are there other actions that the Welsh Government needs to undertake to support the delivery of this Strategy?

28. What information would you find useful to assess how the Welsh Government has progressed against key outcomes and actions in the Strategy?

5. Next Steps

We have talked to people and engaged extensively in preparing this Strategy. We are now consulting formally on our long-term policy direction for water in Wales.

We have not set timescales for delivery on all of our policy aspirations in this consultation as we are keen to hear your views on what is important to you and when you think the Welsh Government should be implementing proposals in order deliver the best outcomes for Wales.

We would be grateful for your general comments as well as responses to specific consultation questions. These will help to inform our final Strategy, which we intend to publish later in 2014.

Annex A - Glossary

Anaerobic Digestion

Anaerobic Digestion (AD) is a natural process where plant and animal materials (biomass) are broken down by micro-organisms in the absence of air. Many forms of biomass are suitable for AD including food waste, slurry and sewage residue. It is also used to treat the food waste produced in homes, farms, supermarkets and industries across the UK. This helps divert waste from landfill.

Area based Approach

The Environment Bill will place a requirement on NRW to develop and implement an area-based approach for natural resource management. This will be a planning and priority setting process that coordinates resource use so that the long term sustainable benefits are optimised for the people, environment and economy of Wales in the present and in the future. It will align catchment based approaches to water management and water resource planning with other land management activity.

Asset Management Plans

The water industry operates on five-yearly cycles called Asset Management Plan (AMP) periods. Prices are set by Ofwat at the beginning of each period, following submissions from each company about what it will cost to deliver their business plans.

Cesspools

Cesspools, or cess-pits, are simple tanks which retain all sewage from a property. This is then removed by tanker on a regular basis for treatment at a sewage treatment plant.

Before 1974, such systems were often serviced by the local council as part of their sewerage provision for their area. Householders therefore paid no specific charge for the tanker service. Since the creation of the Water Authorities in 1974, charges have been introduced for emptying cesspools and most services are now provided on a commercial basis. Householders can find these systems expensive to maintain and there is much anecdotal evidence of illegal overflows and pumping out.

Citizen Science

Citizen science refers to general public engagement in scientific research activities when citizens actively contribute to science either with their intellectual effort or surrounding knowledge or with their tools and resources. Citizen science may be performed by individuals, teams, or networks of volunteers. Citizen scientists often partner with professional scientists to achieve common goals. Large volunteer networks often allow scientists to accomplish tasks that would be too expensive or time consuming to accomplish through other means.

Consumer Council for Water and Consumer Council for Water Wales (CCWater and CCWater Wales)
The Consumer Council for Water is the independent representative of household and business water consumers in England and Wales. It is not a regulator but plays an important role by representing water and sewerage customers in England and Wales.

Cooling Water
Large volumes of water are needed for cooling purposes in the generation of electricity in coal, gas, biomass and nuclear power stations. In Wales, most power stations use coastal or estuarine waters and the water is almost all returned to the environment. Water is also used for cooling in a large number of industrial processes, for example in the steel industry.

Drinking Water Inspectorate (DWI)
The independent regulator of drinking water in England and Wales, responsible for ensuring that companies provide safe drinking water that is acceptable to consumers and meets the standards set down in law.

Ecosystem
An ecosystem is made up of living organisms (plants, animals and microorganisms) in conjunction with their non-living environment (air, water, minerals and soil) and all the diverse and complex interactions that take place between them

Ecosystem approach
An ecosystem approach focuses on the collective management of all resources - maintaining ecological integrity whilst allowing resource extraction/use - rather than managing multiple resources independently. This approach seeks to ensure the co-existence and development of healthy, fully functioning ecosystems and human communities. The term ecosystem approach originally comes from the Convention on Biological Diversity (CBD), where it is described as “a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way”[86]

Ecosystem services
These are the services we get from nature such as clean drinking water; the regulation of air quality, climate and flood risk; opportunities for recreation, tourism and cultural development; and underlying functions such as soil formation and nutrient cycling. Some are essential to life and more readily valued in economic terms, while others such as attractive landscapes are less tangible but nonetheless life-enhancing. Maintaining and enhancing ecosystem services – and restoring them where they have been lost or degraded – is increasingly recognised as essential for the economy and human wellbeing.

[86] http://www.cbd.int/ecosystem

Ecosystem services are defined as services provided by our natural resources that benefit people or other ecosystem functions. While there is no single, agreed method of categorising all ecosystem services, the Millennium Ecosystem Assessment framework[87] is widely accepted.

Effluent
A liquid discharged as waste, as from an industrial plant or sewage works

Green growth
Green growth is a way of fostering economic growth and development, while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies. In practice, this means making the growth process resource efficient, low carbon, cleaner (minimising pollution and environmental impacts) and more resilient (to climate change and natural hazards) without necessarily slowing it[88].

Hydromorphology
Hydromorphology is the term used in river basin management to describe the hydrological and geomorphological processes and attributes of rivers, lakes, estuaries and coastal waters. These are, in effect the physical characteristics of the shape, boundaries and content of a water body.
Of the two elements of hydromorphology, hydrology is about water flow. It is about the quantity and dynamics of water flows, levels and interconnections with other water bodies, including groundwater. Morphology is about the physical form of a water body. It is concerned with the width, depth and structure of the river, lake or sea bed and the condition of the bed, bank and shores.

Where water quality is good, poor hydromorphology can limit ecology. For example a concrete channel will not support the ecological diversity that a natural gravel channel would support and a barrier in a stream can prevent the migration of fish or the transport of sediment.

Integrated Natural Resource Management
Integrated natural resource management is a planning and priority setting process that coordinates the maintenance, enhancement and use of natural resources – taking into account all ecosystem services - so that the long term benefits are optimised for the people, environment and economy of Wales in the present and in the future.

It is the process that will need to be followed to enable the sustainable management of natural resources, to deliver even greater long-term benefits to the economy, society *and* environment.

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[87] The Millennium Ecosystem Assessment (MA) was called for by the United Nations Secretary-General Kofi Annan in 2000. Initiated in 2001, the objective of the MA was to assess the consequences of ecosystem change for human well-being and the scientific basis for action needed to enhance the conservation and sustainable use of those systems and their contribution to human well-being.
[88] OECD: Towards Green Growth

Natural Resources *
In relation to Wales, natural resources extends to the following matters relating to the sustainable management of natural resources:
(a) air, water resources and soil;
(b) geologic and landscapes;
(c) biomass and biological resources;
(d) ecosystems

Explanation of components of definition
(a) represents the general environmental media (as included in the European Commission definition);
(b) represents primarily abiotic elements. Minerals would be captured under geologic which is pertaining to, or based on geology. Both geologic and landscapes have been used as they represent different elements and whilst landscapes are physiographical not all physiographical features are landscapes;
(c) represents essentially all organic life forms, plants, animals and other living organisms. By including biomass, this then includes biological material derived from living, or recently living organisms.
(d) ecosystems have been included to reflect the interconnections and interdependencies of individual natural resources

**Our Environment Bill White Paper[89] consultation set out the above as a proposed definition of Natural Resources in the context of Wales. We had a number of consultation responses on the scope of this definition which we are still analysing and reviewing, therefore this definition is likely to change.*

Natural Resources Wales
Natural Resources Wales is the environmental regulator for Wales, responsible for protecting and improving our natural resources and promoting sustainable development.

Ofwat (the Water Services Regulation Authority)
Ofwat is the economic regulator for the water and sewerage sectors in Wales and England. It is responsible for regulating the water industry and ensuring that water companies provide consumers with a good quality service and value for money. This includes setting price limits to ensure that customers receive a fair deal while allowing water companies to raise sufficient revenue for investment; monitoring water companies' performance and taking action to protect consumers' interests (including investigating uncompetitive behavior); setting efficiency targets for water companies; and making sure that companies deliver the best deal for consumers and the environment in the long term.

Payment for Ecosystem Services (PES)
PES schemes involve payments to the managers of land or other natural resources in exchange for the provision of specified ecosystem services

[89] Environment Bill White Paper - http://wales.gov.uk/consultations/environmentandcountryside/environment-bill-white-paper/?status=closed&lang=en

(or actions anticipated to deliver these services) over-and-above what would otherwise be provided in the absence of payment. Payments are made by the beneficiaries of the services in question, for example, individuals, communities, businesses or governments acting on behalf of various parties. Beneficiaries and land or resource managers enter into PES agreements on a voluntary basis and are in no way obligated to do so[90].

Potable Water
Potable water is water safe enough to be consumed by humans or used with low risk of immediate or long term harm.

Resilience
When applied to ecosystems, resilience means the ability of an ecosystem to withstand or recover from disturbance and its capacity to survive and adapt so that its biological diversity, natural processes and the provision of ecosystem services are maintained. Resilience may exhibit thresholds, which are levels of disturbance beyond which the system cannot recover, or is transformed to an alternative state (which is often undesirable, though not inevitably). Ecosystems are subject to disturbance in the form of many pressures and drivers, which notably include climate change and its knock-on effects. When managing our resources it is important that we think about the ability of ecosystems to resist, absorb, or recover from disturbance.

River basin
A river basin is an area of land from which all surface water run-off flows through a sequence of streams, rivers and, possibly, lakes into the sea at a single river mouth, estuary or delta.

River basin district
A river basin district is an area of land and sea, made up of one or more neighbouring river basins together with their associated groundwaters and coastal waters, which is identified under Article 3(1) of the Water Framework Directive as the main unit for management of river basins.

River Basin Management Plans
A River Basin Management Plan is required every six years under the Water Framework Directive for each river basin district. The plan describes the river basin district, and the pressures that the water environment faces. It shows what this means for the current state of the water environment in the river basin district, and what actions will be taken to address the pressures. It sets out what improvements are possible by and how the actions will make a difference to the local environment - the catchments, estuaries, the coast and groundwater.

River Walks
River walks, also known as catchment walkovers, are systematic visual surveys of catchments by walking. In the case of rivers or canals, this is

[90]Payments for Ecosystem Services: A Best Practice Guide DEFRA May 2013

usually done by following the course of water bodies in an upstream direction. The location, severity and cause of any issues are recorded, along with photographic evidence. Issues may also be traced back to particular sources, or left for more detailed follow-up surveys, depending upon the specific objectives of the walk-over.
They can be an extremely effective means of providing a snap-shot of both urban and rural catchments and evidence for action, particularly in dealing with diffuse pollution.

Septic tanks
These provide only primary treatment of sewage, retaining solids and allowing an overflow of partially treated sewage to discharge into land, where further treatment occurs in the soakaway system. The effluent from such systems may not be discharged into watercourses. As with sewage treatment plants, the discharge will require a registered exemption from Natural Resources Wales, for which there is no charge. Where the discharge could affect a sensitive site (such as an abstraction borehole or a Site of Special Scientific Interest), an environmental permit may be required, for which there is a one-off charge.

Sewage treatment plants
A wide range of small sewage treatment plants are available in Wales. Many manufacturers can provide a complete service to install and maintain such systems. They normally require a power supply, regular inspection and periodic sludge removal. They discharge suitably purified water to the environment, either into the ground or to a watercourse. In most cases, the discharge will require a registered exemption from Natural Resources Wales, for which there is no charge. Where the discharge could affect a sensitive site (such as an abstraction borehole or a Site of Special Scientific Interest), an environmental permit may be required, for which there is a one-off charge.

Sewage
The waste matter from domestic or industrial establishments that is carried away in sewers or drains for dumping or conversion into a form that is not toxic.

Sewerage
The system of pipes used in the removal of waste water and refuse.

Soakaways
A soakaway is where surface water from your roof or driveway is piped to a large underground pit filled with gravel within the boundary of your property, normally 10 to 15 feet away from the foundations.

Swale
A swale is a low tract of land, especially one that is moist or marshy. The term can refer to a natural landscape feature or a human-created one. Artificial swales are often designed to manage water runoff, filter pollutants, and increase rainwater infiltration.

Sustainable Drainage System - SUDS
A sustainable drainage system is designed to reduce the potential impact of new and existing developments with respect to surface water drainage discharges.

Sustainable Development
Sustainable development means enhancing the economic, social and environmental wellbeing of people and communities, achieving a better quality of life for our own and future generations in ways which:

- promote social justice and equality of opportunity; and
- enhance the natural and cultural environment and respect its limits – using only our fair share of the earth's resources and sustaining our cultural legacy[91].

Transitional waters
These are bodies of surface water in the vicinity of river mouths which are partly saline in character as a result of their proximity to coastal waters but which are substantially influenced by freshwater flows.

Water body
Water body means a discrete and significant element of surface water such as a lake, a reservoir, a stream, river or canal, part of a stream, river or canal, a transitional water or a stretch of coastal water.

Water Framework Directive – Assessing waterbodies
Determining water body status and reasons for failure is complex and our understanding changes through time. Even water body numbers and boundaries change as we learn more. We adopt the following approach to assess the status of water bodies:

- We monitor different 'elements' (e.g. fish) for different water bodies. When an element 'score' is lower than expected, that element causes the water body to fail.
- We then collect evidence to determine why the element is failing- these are the 'Reasons for Failure'. A water body can fail for more than one element, and an element can fail for more than one reason.
- Our level of understanding determines our certainty about a Reason for Failure: 'Confirmed' = compelling evidence, 'Probable' = reasonable evidence, 'Suspected' = suggestive evidence.
- We also consider the severity for the Reason for Failure - whether we think it is having a major or minor impact on the failing element.

Figure 4 shows the reasons for failure and includes a category for 'ongoing investigations' and data for all levels of certainty and severity. It includes few data for coastal /transitional waterbodies. It provides a general overview of the issues affecting the water environment in Wales.

[91]Sustainable Development Scheme - http://wales.gov.uk/newsroom/sustainabledevelopment/2013/130312-sustainable-development/?lang=en

Water Health Partnership
The Water Health Partnership for Wales is an initiative that brings together relevant agencies to agree how to work together more effectively to protect public health by ensuring the provision of safe drinking water. Agencies in the Partnership include the Welsh Government, the Drinking Water Inspectorate (DWI), local authorities, the Consumer Council for Water Wales, Dŵr Cymru Welsh Water and Public Health Wales.

Water services
Water services mean all services which provide water for households, public institutions or any economic activity. This includes the abstraction, impoundment, storage, treatment and distribution of surface water or groundwater. It also includes waste-water collection and treatment facilities which subsequently discharge into surface water.

Water System
Water System means both a river and all it tributaries or the means of supplying water to households.

Water Company
A water company is an organisation that supplies water and/or sewerage services to domestic and business premises.

Water Undertakers
The term ‘water undertaker’ means a company appointed under the Water Industry Act 1991 (WIA91) to provide water services to a defined geographical area.

Water Sensitive Urban Design - WSUDs
Water Sensitive Urban Design is a land planning and engineering design approach which integrates the urban water cycle, including stormwater, groundwater and wastewater management and water supply, into urban design to minimise environmental degradation and improve aesthetic and recreational appeal

Annexe B – Consultation Response Form

Your name:

Organisation (if applicable):

E-mail / telephone number:

Your Address:

Consultation Questions

Please respond to all those questions that relate to your areas of interest. Any supporting evidence will assist in the analysis of responses.

Water for Nature, People and Business

1. In looking at implementing legislation, are their any specific areas that you would like us to focus on?

2. Do you have any suggestions for improving and extending community involvement in integrated catchment management?

3. We have highlighted the close link between land management and the water environment. Are you aware of examples of good practice which could be reproduced elsewhere?

4: What opportunities do you see for developing PES schemes in relation to water management in Wales? What should be the role of Government in developing these schemes?

5. What more could we do to make the most of our water, particularly in terms of supporting our agenda for Green Growth?

Taking Action to Reduce Pollution

6. Do you agree with our focus on diffuse pollution? If not, please explain why.

7. Are there any additional pollution problems which you believe we should identify? If so, what actions do you believe are required?

8. Do you agree with the scope of activity for General Binding Rules, as specified?

9. Do you agree that variable monetary penalties are the appropriate mechanism for Natural Resources Wales to enforce general binding rules?

Improving the way we plan and manage our water services

10. Do you agree with the principle behind aligning the Water Resource Management Plan and Drought Plan with the Asset Management Planning Cycle?

11. Do you agree that there is a need to improve our long term planning for waste water and sewerage management?

12. How can we ensure that Water Companies plans link with wider natural resource management plans? Do you have views about how this should be implemented?

13. Do you agree with the proposals to encourage more efficient water use? Are there are further actions that can be taken?

14. Do you agree which our approach to metering? What other factors do we need to consider?

15. Do you agree with this approach to managing leakage? Are there are ways we can ensure leakage is sustainably reduced?

Water affordability and delivering excellent services to customers

16. How can we ensure best practice is shared across the water industry, to ensure that innovative solutions to address water poverty issues are shared with others?

17. Have we identified the key issues and actions in relation to water affordability issues?

18. Are there any other approaches we could adopt to support the needs of both domestic and business customers?

Protecting and Improving Drinking Water Quality

19. Are there any additional drinking water quality matters that we should consider? Do you agree with our proposal to investigate the transfer of water supply pipes to the water companies?

20. Should we develop and consult on a long term strategy to remove the health risks associated with the historic use of lead in plumbing?

A New Approach for Drainage

21. Do you agree with our priorities for drainage matters?

22. This section has focused on built infrastructure, which mostly serves developed areas. Is there anything more we should consider for rural areas?

23. Are there any other significant issues which you believe we should have included?

Supporting Delivery

24. Do you agree with our approach to ensuring that regulation in focussed on the Welsh Government's priorities? Do you have any other views or suggestions regarding the regulatory framework and whether it is fit for purpose?

25. Are there other actions that we should undertake to support innovation across the water sector as a whole?

26. What more could the Welsh Government do to effectively support businesses in the water sector to grow and prosper?

27. Are there other actions that the Welsh Government needs to undertake to support the delivery of this Strategy?

28. What information would you find useful to assess how the Welsh Government has progressed against key outcomes and actions in the Strategy?

29: We have asked a number of specific questions. If you have any related issues which we have not specifically addressed, please use this space to report them:

Please enter here:

Responses to consultations are likely to be made public, on the internet or in a report. If you would prefer your response to remain anonymous, please tick here: ☐